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Loss of Railway Directors' Experience

PREVIOUSLY we have expressed the view that the scrapping of the accumulated knowledge and experience represented by the boards of directors of the four main-line railway companies under the State ownership of transport is unwise. The loss of this intangible asset will be felt particularly when matters concerning finance, the purchase of stores, and so forth come up for decision by British Railways. The boards of directors were composed of men who jointly contributed a wide knowledge of industrial and commercial affairs, and their advice and scrutiny when proposals were considered involving large-scale projects, often calling for the disbursement of some millions of pounds, was extremely valuable. A technical railwayman, by reason of his training, and the need, because of the complexity of the modern railway industry, to be a specialist in some particular branch of his business, cannot be expected to be familiar with commodity and other markets. Moreover, he is more concerned with his own branch of technical operation than with its economy or overall effect.

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Transport Organisation in Ulster

In our January 16 issue we gave a text of a statement issued by the Railway Executive (Northern Counties Committee) in Belfast, saying that although the systems of the British railway companies as from January 1 had passed to the British Transport Commission, special arrangements had been made in respect of the Northern Counties Committee by which that Committee, while within the main framework of the new organisation, retained autonomy in Northern Ireland. Last Friday the Northern Ireland Government announced that the first step towards the acquisition from the British Transport Commission of the Northern Ireland assets of the L.M.S.R. (Northern Counties Committee) had been taken that day, when Sir Roland Nugent, the Northern Ireland Minister of Commerce, and Mr. G. H. E. Parr, Permanent Secretary to the Ministry, had had a preliminary discussion with Sir Cyril Hurcomb, Chairman of the British Transport Commission. Broad principles governing the transfer were considered, and, when these are established, technical talks will follow. If the negotiations are successful, the assets referred to ultimately will vest in the new Northern Ireland Transport Authority, which is to be set up to co-ordinate road and rail transport. Proposals for the establishment of this authority will be laid before the Northern Ireland Parliament in due course. The Northern Ireland Minister of Commerce has already set in motion the policy of the Government's White Paper on the co-ordination of road and rail transport, by appointing Mr. F. A. Pope (formerly Vice-President, L.M.S.R.) as Chairman of the Northern Ireland Road Transport Board, and this has just purchased the Belfast & County Down Railway Company (see page 114).

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Coal Output and Stocks

The marked improvement in coal output which has occurred in recent weeks was sufficient to raise production during 1947 to 199,681,500 tons, or only 318,500 tons short of the 200 million-ton target. The latest available figures give a provisional output for the week ended January 10 of 4,059,000 tons, which compares with 3,127,300 tons for the previous week, and a total inland consumption for the period to January 3 of 3,705,000 tons. Distributed stocks on January 3 totalled 16,033,000 tons, which compares with only 7,876,000 tons a year earlier. Railway stocks of coal in the latest period are given as 828,000 tons, or 2·8 winter weeks' consumption in comparison with only 356,000 tons, or 1·2 winter weeks' consumption at the similar time last year. During the week ended January 3 the return, which is issued by the Ministry of Fuel & Power, shows that no tonnage of coal was lost as a result of rail transport difficulties or want of wagons, whereas a year ago 3,100 tons were lost from these causes.

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Railway Passenger Amenities

Periodically suggestions are made for providing the British railways with improved passenger amenities both on the trains and at stations, and, indeed, for introducing an element of luxury which contrasts strangely with present austerity. At the Institute of Transport on Monday last, Mr. Christian

Barman, Publicity Officer to the British Transport Commission, and Mr. M. G. Bennett, General Research Manager of the London Midland Region of British Railways, gave their ideas of what should be attempted in this direction—presumably in circumstances far more prosperous than those which are likely to obtain for a considerable time. If ample funds, labour, and material were available for the purpose, a good case could be made out for implementing some of the suggestions which are summarised elsewhere in this issue. Fundamentally, sight should not be lost of the fact that the main purpose for which passengers visit a station is to leave it as soon as possible either by train or for a nearby destination. It would be a pity if the purely functional aspects of both stations and trains were to be obscured by decorative endeavours. In any event, as the authors acknowledged, so long as present conconditions persist there is little likelihood that it will be possible to spare time, money, materials, or manpower for any but the most strictly utilitarian purposes.

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Overseas Railway Traffics

The half-year to December 31 on the Argentine North Eastern and Entre Rios Railways closed with both systems recording increases over 1946-47 in their aggregate figures, which were substantially better than the corresponding increases shown a year ago. On the Argentine North Eastern the improvement of ps. 605,100 in aggregate receipts for the 26 weeks compares with ps. 367,500 a year ago, while the Entre Rios increase is ps. 392,800, as against ps. 170,000 at December 28, 1946. In the fortnight ended January 10 there have been total gains over the preceding year of ps. 345,840 on the Central Argentine, ps. 2,128,000 on the Buenos Ayres & Pacific, ps. 930,000 on the Buenos Ayres Great Southern, and ps. 358,000 on the Buenos Ayres Western. All four companies showed increases in both weeks. A statement from the Leopoldina Railway shows that aggregate receipts for the year to December 31 were £3,430,841, as compared with £3,255,543 in 1946. G.W. of Brazil aggregate takings for 1947 at December 27 were £1,770,600, an increase of £185,400. Some results are compared below:—

	No. of week	Weekly traffic	Inc. or dec.	Aggregate traffics	Inc. or dec.
Buenos Ayres & Pacific* ...	28	3,050	+1,050	72,091	+9,935
Buenos Ayres Great Southern*	28	4,352	+408	98,073	+3,583
Buenos Ayres Western* ...	28	1,550	+188	39,803	+4,920
Central Argentine* ...	28	3,598	+332	94,313	+5,895
		£	£	£	£
Canadian Pacific	48	6,808,750	+242,750	72,495,250	+5,608,250

* Traffic returns in thousands of pesos

Canadian National Railways results for November showed an improvement of £91,250, and the aggregate, at £99,924,750, was £8,731,000 above the preceding year.

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Railway Rolling Stock Production

According to figures contained in the December issue of the *Monthly Digest of Statistics*, production of railway rolling stock of all kinds was at a relatively high level in October of last year, the latest month for which details are given. The total of main-line locomotives produced, at 77, was the highest recorded since December, 1946, when the same figure was reached. Of these 42 were for export. Coaches leaving the works numbered 134, more than in any other month in either 1947 or 1946. Twenty-one of these were earmarked for overseas. Wagon production was also at a higher level—4,119 units—than at any time since March, 1946, when it reached 4,213. On the other hand, during October last only 799 were built for export, whereas in March, 1946, the corresponding figure was 1,926. For the whole of 1946 a total of 726 main-line locomotives was produced, of which 358 were for export, and the output of coaches was 838; of the latter only 15 were exported. Wagon production was 39,354, of which 11,389 were for overseas use.

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Railway Organisation in Independent Burma

On January 4, 1948, Burma left the British Commonwealth of Nations. She marked her independence by, among other things, appointing Burma nationals to all the posts of importance in her services. In the case of the administrative or non-technical services, Burmanisation has been complete, but in the technical services a few European officers have been invited to remain as technical advisers. In accordance with this policy U Tun Thwin, formerly Superintendent, Rates & Fares, on the Burma Railways, has been appointed as General Manager, and Brigadier J. C. B. Wakeford, hitherto Chief Railway Commissioner, becomes Technical Adviser in Railways to the Government of Burma. To say the least of it, this is an interesting experiment. On the one hand it may be considered an error because it uses two officers to do the work formerly performed by one; because it promotes in one sudden step an officer who has hitherto not even had experience as head of a department; because it apparently removes from executive power an experienced executive officer; because it savours of the doctrinaire; and because the middle of a heavy programme of rehabilitation is not the right time to change the controlling hand. On the other hand, it may be considered as correct, because it gives the Burman an opportunity to learn by doing, and because with Burman officers at the head there may be closer co-operation between officers and staff than was possible when they had no common mother tongue. Whether the experiments will prove a success or a failure depends on the personal relationships between the Adviser and the General Manager. They have been jointly set a most difficult task, which will tax all their patience, their good humour, their tolerance, and their tact.

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Railway Staff Administration and Welfare

The subject of railway staff administration, which was dealt with in a paper read to the Railway Students' Association by Mr. S. G. Ward, Assistant Regional Staff Officer, Western Region, on January 14, was described by Mr. John Benstead, member of the British Transport Commission, in his introductory remarks at the meeting, as one which could make or mar the great experiment of nationalisation. As reported elsewhere, Mr. Ward gave a detailed exposition of railway negotiating machinery, which, as he pointed out, is of topical interest having regard to obligations laid on the British Transport Commission by the Transport Act. In addition to settling terms and conditions of employment, the Commission is required to promote and encourage measures affecting the safety, health, and welfare of the persons it employs. Mr. Ward discussed some of the many ventures in this direction undertaken by the railway companies before nationalisation. He emphasised the fact that welfare organisation must cater for off-duty interests as well as working hours, and recalled that the staff association in his own region catered for almost every conceivable leisure pursuit, from music and drama to horticultural shows, for a subscription of a penny a week.

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A Railway Lead in Research

There is little novelty today in regarding scientists as making a direct contribution to industry, in spite of what Mr. Herbert Morrison implied last week when announcing Government plans for research establishments in the new town of Stevenage. A Scientific Research Department was set up by the L.M.S.R. as early as 1932. Articles in our pages on numerous occasions have indicated the wide range of its activities. At the end of last year the L.M.S.R. published an illustrated booklet describing the work of the department and its Derby laboratory, opened in 1935. The department has six sections, of which those dealing with engineering, physics, metallurgy, paint, and textiles are located at Derby, while the chemical section maintains laboratories at four other centres as well in order to deal with divisional and local work. Advanced types of electronic and photographic apparatus are available for studying the behaviour of parts at high speed or under mechanical stress, and there is a wind tunnel for investigating the effects of air flow on the great variety of small components which are subjected in service to high-speed air currents. The importance attached to the subject by the former L.M.S.R. may be gauged by the fact that its Scientific Research Department employed a total staff of nearly 200, whose work was divided between the laboratory and contact with the problems on the spot.

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The Load Compensating Brake

A new development in compressed air braking is being introduced on the Illinois Central Railroad, which is about to place in service 400 freight vehicles fitted with the new Westinghouse load compensating brake. This device is the outcome of earlier

proposals to provide equipment giving 50-60 per cent. empty braking ratio and about 30 per cent. loaded ratio, whilst retaining only a single brake cylinder with consequent simplification of piping and other components. This is the first time that the production of varying braking forces has been achieved with a single cylinder; an additional attraction is the fact that the new device needs less air for braking a loaded wagon than an empty wagon—a most desirable feature. The two vital items in the new brake are the novel design of 12-in. brake cylinder, and the scale-beam mechanism. The former incorporates a hollow piston rod of 7⅛-in. diameter, the hollow portion being large enough to form a chamber into which compressed air can be admitted so as to build up a pressure resisting the air acting on the other side of the piston. The scale-beam mechanism decides the magnitude of this resisting pressure, by graduating the movement of a "compensating valve" in accordance with the loading of the vehicle. The deflection of the vehicle springs, being a measure of the loading, is made the controlling factor in the setting of the compensating valve.

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The Transport Arbitration Tribunal

UNDER part 8 of the Transport Act, 1947, the Transport Arbitration Tribunal was set up consisting of four members: one with legal experience to be appointed by the Lord Chancellor, and to act as President of the Tribunal; one with legal experience in Scotland to be appointed by the Lord President of the Court of Session; and two others also to be appointed by the Lord Chancellor, one with experience in business, and the other with experience in finance.

These appointments were duly made, as recorded in our August 15, 1947, issue, when it was announced that Mr. C. Montgomery White, K.C., Mr. C. W. G. Guest, K.C., Mr. B. G. Catterns, and Sir Russell Kettle had taken office. The Tribunal is a court of record, and its main purpose is to determine any matters which may be in dispute between the British Transport Commission and the undertakings which that body decides to acquire, under its powers of acquisition, as to compensation to be paid. These include some 35 securities of railways and canal companies, a value for which could not be fixed by reference to Stock Exchange prices on the dates specified for the other securities affected by the Transport Act. This was because no really free market existed in the stocks and transactions in them seldom occurred. In such circumstances it was decided to refer the question of the value to the Arbitration Tribunal, and, pending a decision by that body, dealings in the stocks have been very difficult because the only right transferable is that to British Transport stock, which attaches to the securities on a date to be announced after the findings of the Tribunal are known.

The initiative in bringing the matter before the Tribunal lies with the Commission, and in the City Notes of *The Times* of January 5 hope was expressed that this body would publish its findings with the least possible delay. Mr. C. Montgomery White, President of the Tribunal, has taken the unusual step of writing to *The Times*, pointing out that the Tribunal is powerless until application is made to it, but it shares the hope that it will sit in the immediate future. Because of the unusual interest of the letter, which was published on January 15, we reproduce it in full below:—

In your City Notes in *The Times* of January 5 you expressed the hope that the Transport Arbitration Tribunal would sit in the immediate future and publish its finding with the least possible delay. This is a hope which is shared by the members of the tribunal. Under Section 17 (3) of the Transport Act, 1947, however, proceedings for the valuation of the "unvalued" stocks must be initiated by the British Transport Commission, and the tribunal is powerless until application is made to it. So far, applications have been filed in respect of two only of the 35 undertakings mentioned in Part II of the fourth schedule to the Act, and the tribunal has been informed that with regard to three other securities the question of valuation does not arise because these securities have become vested in the commission. The tribunal is under the duty of giving to the holders of the securities to be valued an opportunity of being heard, and, if they are to make effective use of this right, they must clearly be given time to formulate any arguments they may wish to address to the tribunal.

In the circumstances, it is evident that some time must elapse before the valuation of the securities can be completed. But stockholders may rest assured that there will be no avoidable delay on the part of the tribunal, and those who desire to be heard by the tribunal can assist in reducing their period of suspense by themselves being prompt in taking any steps required by the rules of the tribunal.

The tribunal is not concerned with the price at which the Transport Stock will eventually be issued to holders of the "unvalued" stocks. There seems, however, to be no ground for the apprehension (or hope) that the Treasury may effect the exchange at the market price at the time of issue. Under paragraph 4 of Part II of the fifth schedule to the Act for the purpose of computing the amount of Transport Stock to be issued in satisfaction of compensation for the "unvalued" securities, the date of transfer—*i.e.*, January 1, 1948— is to be treated as the date of issue, and under Section 89 (2) the Treasury must value the stock as at the date of issue.

Yours faithfully,

C. MONTGOMERY WHITE

Transport Arbitration Tribunal,
39, Belgrave Square, S.W.1.

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South Australian Government Railways

IN the year ended June 30, 1946, the earnings of the South Australian Government Railways totalled £4,897,151, but the combined claims of ordinary working expenses and pension charges (£5,010,283) resulted in an operating deficit of £113,132. Other charges, totalling £1,333,732, increased the total deficit to £1,446,864, which was higher by £518,523 than the deficit of the preceding year. In his report, the South Australian Railways Commissioner recalls his estimate early in 1946, based on the first six months of the year, that the deficit by June 30 would be approximately £1,500,000. Some operating results are compared below:—

	1944-45	1945-46
Miles open	2,547½	2,547½
Train-miles	6,618,025	6,353,586
Passenger journeys	24,820,027	23,118,553
Goods, minerals and livestock (tons)	3,501,821	2,997,182
Average haul (miles)	117·9	127·9
Operating ratio (per cent.)	92·0	102·3
	£	£
Capital cost of open lines	30,310,211	30,570,960
Gross earnings	5,484,439	4,897,151
Working expenses, including pensions	5,047,081	5,010,283
Net earnings	437,358	—113,132
Interest, sinking fund, depreciation, etc.	1,361,349	1,333,732
Total deficit	928,341	1,446,864

Shortage of coal in the period from December 1, 1945, to June 30, 1946, as a result of the New South Wales coal strike in December and January, led to steam services showing a reduction of 367,626 train-miles in comparison with the preceding December and January. Apart from the coal difficulties, the poor wheat season and the fall in military traffic doubtless would have had an effect on train services, but the period concerned usually produces a good revenue from passenger traffic. Although the acute coal shortage ended during January, 1946, deliveries continued to be irregular, and it is felt that the deficit of £1,446,864 is less than might have been expected in the circumstances.

Every effort was made to reduce working expenses, and a decrease from £5,047,081 to £5,010,283 was achieved, but the wages bill and certain commodity prices rose considerably, so that the net result was a reduction in the working expenditure of approximately £37,000. Earnings, on the other hand, decreased by £587,288.

The Commissioner points out that freight rates and passenger fares in South Australia have not been increased since 1928, and includes in his report a table showing how expenses, over which the administration has no control, have risen during the years 1938-39 to 1945-46 inclusive. The total increase in wages, cost of materials, taxation and similar factors was £1,425,907 higher in 1945-46 than in 1937-38. Assuming that the present costs of materials remain constant, the Commissioner shows that, in order to extinguish the present deficit, it would be necessary to reduce the number of staff employed on June 30, 1946, from 11,000 to approximately 6,600, illustrating that the present position can be rectified only to a limited extent by means within the control of the administration.

It is considered that the time has come to consider seriously the raising of rates and fares in South Australia, and in view of the sparsely-populated nature of the State it would be equitable to ease the burden on transport users, in part, by reducing the capital account of the railways in at least as great a ratio as has been effected in some other States. Recurrent deficits create the view in the public mind that the railways must be obsolescent, and have a thoroughly bad effect on the morale of the whole of the railway staff. After a reduction of capital, the Commissioner proposes increased co-ordination of road and rail transport, including suburban services, and a

long-term policy of suburban electrification. After these steps have been taken, and their effectiveness assessed, consideration should be given to increasing rates and fares.

Inquiries were begun during the year into the cost of electrifying the railways in the suburban area, it being felt that the replacement of locomotives and rolling stock, consequential on proposals to unify railway gauges in Australia, would make the moment opportune for introducing electrified services. At the same time, electrification would enable local coal resources to be used in the most economical way possible, namely, in a fixed generating plant.

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Northern Ireland Road Transport Board

THE report of the Northern Ireland Road Transport Board for the year ended September 30 last (which was summarised in our December 19, 1947, issue) records the strengthening and expansion of its services. Although the fleet of vehicles was at a higher level than in any preceding year, demands for increased facilities from the public were on such a scale that they could not be met in full. There was an increase of nearly 6,000,000 in the number of passengers carried, which reached 80,037,153, while the tonnage of general merchandise rose by over 33,000 tons to 1,768,926 tons. Gross receipts, at £3,381,683, were higher by 17·47 per cent., and constituted a record. After charging £420,000 for depreciation and reserve for increased cost of renewals the accounts for the year show an operating profit of £307,079. Miscellaneous receipts contributed a net figure of £6,125, giving total net receipts for the year of £313,204. Some results for the year are tabulated below, in comparison with 1945-46:—

	1945-46	1946-47
	£	£
Passengers	1,790,146	2,160,187
Parcels, luggage and mails	32,908	38,210
Merchandise	1,055,799	1,183,286
Total	2,878,853	3,381,683
Working expenses	2,667,091	3,074,604
Net traffic receipts	211,762	307,079
Other receipts	18,197	18,150
Miscellaneous charges	10,593	12,025
Balance	219,366	313,204

A 44-hr. week was introduced during the year, and, together with other arbitration awards, will cost the board over £160,000 in a full 12 months; of this sum, approximately £40,000 had fallen in the year to September 30, 1947. The board, therefore, will be faced next year with a very steep increase in its expenditure, and the report states that an early reconsideration will have to be made of its scales of charges in order to maintain a balance between its income and the progressively increasing burden of costs.

After an allocation of £10,000 to general reserve, and providing for taxation and other charges, there remains a surplus of £19,827, as against £14,139 last year. The debit balance is reduced from £274,424 to £254,597, and has undergone a total reduction of £356,957 in the last seven years.

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A Lively American Railway

IN recent years one of the liveliest of the U.S.A. railways has been the Chesapeake & Ohio Railway, under the energetic chairmanship of Mr. Robert R. Young, and, since the end of the war, no American railway has been in the news to a greater extent. This is a curious position for a line whose prosperity depends largely on the output of the rich bituminous coalfields of West Virginia and Kentucky, and which derives 89 per cent. of its revenue from freight operations. Naturally it is the passenger operations that are more in the public eye, and the C. & O. is not content with moving freight on a large scale, but aspires to take a leading part in developing passenger travel. The company claims credit for spurring on the other railways to improve long-distance services. In January, 1946, the C. & O. suggested the running of through sleeping cars between the Atlantic and Pacific coasts, and used the popular press to advertise its slogan "A hog can cross America without changing trains—but you can't." Within three months such services began. In April of the same year the C. & O. proposed that similar facilities should be provided between the Eastern Seaboard and places in Texas; in July through services were arranged *via* St. Louis. In May the C. & O. took the initiative in stopping a black market in sleeping-car reservations.

Later in 1946, after pressing for the replacement of obsolete sleeping cars, it set the pace for the other companies by ordering new passenger equipment at a cost of over $33,000,000. The order included ten powerful steam locomotives; three steam-turbine-powered trains, styled "Chessies," for the Washington—Cincinnati run; and 97 sleeping cars and 159 coaches to renovate the main-line rolling stock. That is an ambitious programme for a railway which carried only 4,121,000 passengers in 1946 and worked only 5,701,000 passenger train-miles, or less than 6 train-miles per mile of road per day. Passenger revenue in 1946 was 40 per cent. below 1945 and continued to fall rapidly during the first 7 months of 1947. In the meantime fresh expenditure is being incurred freely on passenger amenities.

Probably the C. & O. does not calculate on earning a large direct return from these passenger expenditures. It may regard them largely as a means of enhancing the prestige of the C. & O. as a growing railway, pulsating with enterprise and bent on influencing transport developments. For its ultimate aim is nothing short of vitalising the whole U.S.A. railway system. In October, 1946, the C. & O. proclaimed that it was dissatisfied with the leadership of the Association of American Railroads, alike in legal matters, public relations, and the handling of freight rates. Resignation from the A.A.R. followed, and Mr. R. R. Young became Chairman of a new organisation called the Federation for Railway Progress, formed in February last to represent the public, railway security holders, railway labour, and financial institutions, as well as individuals interested in railway development. The Federation intends to campaign for new equipment and improved services, for a balanced wage and rate structure, for progressive management, and for a return of free railway enterprise.

To some extent, the edge has been taken off these high-sounding generalities by the success of the A.A.R. in obtaining the authority of the Interstate Commerce Commission to increase freight rates in 1946 and again in 1947. The C. & O. admits the encouraging nature of these rate advances and has arranged also to continue to participate in several essential branches of work supervised by the A.A.R., such as the Car Service Division, Bureau of Explosives, Bureau of Railway Economics, and the Railway Engineering and Mechanical Associations. It is beyond dispute that these functions have been carried on to the satisfaction of the railways and the public.

At the time of writing, the U.S.A. railways have not shown any inclination to support the breakaway from the A.A.R., and the C. & O. may find that a long purse is needed to keep in being the dissident movement it has started. There can be no doubt that the C. & O. financial position is strong. Since 1899 it has paid a dividend every year except in 1915; its dividends were not interrupted during the trade slump of the 1930s. The line has over 88,000 stockholders with an average holding of 87 shares of $25 par value; in 1946 they received a dividend of $3·5 a share.

This financial strength is derived from the fact that the C. & O. serves nearly 300 mines, which forwarded 59,400,000 short tons of coal in 1946. A further tonnage of 13,100,000 tons was received from connecting railways, so that altogether the C. & O. carried 72,500,000 tons of bituminous coal last year. That huge quantity represented about 76 per cent. of its total freight carryings of 95,625,000 tons. No fewer than 60,300 of the C. & O. stock of 75,700 wagons are designed to carry coal and coke. Its latest purchasing order was for 1,000 seventy-ton hopper wagons, equipped with roller bearings, and for 1,000 fifty-ton box cars.

In 1946 the average train load on the C. & O. consisted of 46 loaded wagons carrying 48 tons apiece, or more than 2,200 tons. Yet these heavy trains moved at a speed of 14·6 m.p.h. The length of haul for coal was 297 miles and for general merchandise 230 miles, reversing the state of affairs on our own railways, where high-class merchandise is carried for longer distances than coal. The C. & O. worked 25,380 net ton-miles per route-mile per day, an astonishing record for a railway over 3,050 miles in length. The corresponding statistic for the Pennsylvania was 16,510, and for the whole of the U.S.A. railways 7,655, while the British railways came far behind with an average of 3,188 short ton-miles a day per mile of first track.

Improving Conditions on Pakistan Railways

(From a correspondent)

THE two railways of Pakistan, namely, the North Western in Western Pakistan, and the Eastern Bengal in Eastern Pakistan, are settling down in spite of the many difficulties that confronted them on August 15, the date of partition. The North Western is still suffering from inadequate stocks and supplies of coal, and has, as a result, to run a restricted service of trains. Some idea of the cuts that have been made can be gathered from the fact that the only through passenger train between Lahore and Karachi is the "Karachi Mail"; and between Rawalpindi and Lahore, the "Frontier Mail." No passenger trains and very few goods trains to West Punjab are being run by the Eastern Punjab Railway (the eastern portion, situated in India, of the old North Western), and, at the time of writing, it is not known when that railway proposes to resume running such trains. Coal is being received in Karachi by sea from Calcutta, but this is not sufficient to meet the full requirements of the railway.

In the Karachi Division a large number of locomotives has been using oil fuel for many years, and increased use of this fuel is now being actively considered. The introduction of diesel-electric locomotives also is being investigated. The Eastern Bengal Railway, being comparatively close to the coal-fields, is not suffering from a coal shortage to the same extent as the North Western, but there have been anxious moments.

Refugee trains are still moving between East and West Punjab, and in the reverse direction also, but these movements are now reasonably well under control. On the North Western Railway, stations have been cleared of refugees who, a short time ago, were forming semi-permanent camps on the platforms. The regular passenger trains that are running now move without passengers on the roof, although they are still to be seen on the buffers. The Minister for Communications recently instituted a drive for the prevention of ticketless travel, which, as a result of the unsettled conditions, had assumed large proportions. Extra checking staff, in some cases in charge of a junior officer, were appointed; publicity was given in the Press, by notices, and on the screen; additional magistrates were secured to deal summarily with offenders. Results were extremely gratifying, for not only was much additional revenue secured in the early days, but the evil now has been greatly reduced.

At the time of partition, State railway employees, like all Central Government employees, were permitted to choose whether they would serve in Pakistan or in India. When the disturbances broke out in the Punjab, the non-Muslim staff from the West Punjab left in large numbers, and the North Western Railway was left in a very unhappy position, as the Pakistan-opting staff from India was unable to move owing to the breakdown in communications; but as the position improved, small numbers were able to travel—especially from East Punjab. Staff from the G.I.P. and the B.B. & C.I. Railways collected in Bombay in their thousands in an attempt to obtain a ship to Karachi. Camps were opened in the city, and more steamers were placed on the run by the shipping companies. The Government of Pakistan opened a Transfer Office in Bombay, staffed largely by railway officers, to deal with the situation, which was eased in a remarkably short time, and at the present moment Bombay has been cleared except for some stragglers still coming in from up-country. The transfer organisation now is moving staff by train from the United Provinces to the Western Punjab, and it was hoped to finish this movement in January. A large number of men was released by the Indian railways from the neighbourhood of Calcutta, in Western Bengal, and descended in a horde on the Eastern Bengal Railway, which, being a small railway, was considerably embarrassed not only in dealing with the employees and their families, but also with their personal and household effects.

The floods last season caused damage to the training works above the Hardinge Bridge over the Ganges, and schemes for repair are now under consideration. By the end of December temporary repairs had been made to all the damage caused by the floods in the Lahore area of the North Western Railway. Permanent repairs to the Chota Ravi Bridge, between Lahore and Shahdara on the main line to the North, will, however, require several months' work. The position regarding repairs to the damage on the Eastern Punjab Railway, between Ferozepore and the frontier, is not known, but through running had not been restored at the time of writing.

The portion of the metre-gauge Jodhpur Railway situated in Sind was the property of the Indian Government, and was worked by the Jodhpur Railway on its behalf. In July, 1947, notice was given by the Indian Government of its intention to take over the working of the section in Sind, which is a province of Pakistan, and this in due course will become part of the North Western Railway. The length to be taken over is some 300 miles, and this will be the only metre-gauge section of the North Western Railway which at present has only broad-gauge (5-ft. 6-in.) and narrow-gauge (2-ft. 6-in.) lines.

Publications Received

Unsere Kraftwerke (Our Power Stations). By Hans Eggenberger. Zurich: Orell Füssli Verlag. 7¾ in. × 5 in. 80 pp. Illustrated. Paper covers. Price fr.3 net. This is the fourth volume to appear in the series known as the "Swiss Federal Railways Primers," intended to cover when complete every aspect of the construction and operation of that important system of lines. Dr. Eggenberger is exceptionally well qualified to deal with the subject, for as a young engineer entrant to the railway service in 1909, he was entrusted with the task of finding additional suitable sources of water power, in connection with the investigations of the commission set up in 1904 to look into the feasibility of electrifying the Federal lines, and has been closely associated with this work ever since.

This book, which is excellently illustrated, deals with the question of whether railway-owned or privately-owned power stations were to be provided, the estimated power consumption, the water rights concessions, and similar details; and then describes the power stations at Massaboden, Ritom, Amsteg, Göschenen, Barberine, Trient, Vernayaz, Rupperswil-Auenstein, and the Etzel station. The linking up and working together of the chain of stations are explained, and there are chapters on the service instructions to the staff and their hours of duty and related matters. Dr. Eggenberger has made the story absorbingly interesting, and contrives to convey to his readers a clear idea of the whole subject.

Locomotives. By W. J. Bassett-Lowke and drawn by Paul B. Mann. West Drayton, Mddx.: Penguin Books Limited. 8¼ in. × 7¼ in. 30 pp. Fully illustrated. Paper covers. Price 1s. 6d.—Attractive black and white and colour drawings of locomotives are reproduced in this further booklet in the Puffin Picture Books series, and there is a short descriptive note in each case. Historic and overseas steam locomotives are among Mr. Paul B. Mann's striking drawings and three examples of electric locomotives also have been included.

Railways at Work.—The Public Relations Section, Department of Railways, New South Wales, has issued an illustrated booklet reviewing the transport and associated activities of the administration. Many railway facts are brought home to the public in this collection of 48 photographic reproductions and brief explanatory letterpress. Among recent engineering developments surveyed in the booklet are the new Hawksbury River Bridge; deviations and duplication of main lines; and forthcoming extensions of the Sydney underground railway. A foreword by the Commissioner for Railways, Mr. T. J. Hartigan, recalls that the New South Wales Department of Railways controls the largest industrial undertaking in the Commonwealth, representing total investments of £155 million.

Speedbird.—Among a number of well-illustrated features of travel and general interest, the winter edition of *Speedbird*, the journal of the British Overseas Airways Corporation, includes a description of radio aids to navigation. The facilities described include the blind approach beacon system and the homing aids known as "Rebecca" and "Eureka," which have been adapted from their wartime functions to the requirements of civil aviation.

Cam-Grinding Machines.—A new illustrated catalogue from the Churchill Machine Tool Co. Ltd., Broadheath, Manchester, illustrates some technical features of the company's cam-grinding machines, and emphasises the rapidly extending use of cams for governing mechanical movements in almost every type of machinery. The company built its first cam-grinder nearly 40 years ago, since when, although the principles of operation have not been modified, the details have been developed steadily with an accumulating experience in the production of cams for numerous industries.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Timetable Revision

7, Princes Square, London, W.2. January 11

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—With the main thesis of your leader of January 9 on timetable revision, no one will disagree. It is long overdue, and with all the railways under one control, the best routes for the various services, more particularly cross-country, can now be taken irrespective of the former owner. In fact, a better network of cross-country trains of a really express nature would be welcome.

Unless, however, the writer has his tongue in his cheek, the last paragraph is somewhat surprising, to put it mildly. Of course such an idea is typical of present day thought; that everything should be standardised at the lowest level Even so, surely speed is not the criterion, but occupation time of the section, and consequently every train would not only have to run at the same speed and make the same stops, but all sections should be of equal length—which is obviously absurd. In other words, your scheme of equal speeds is one of those delightful dreams indulged in by theorists, which has no practical application.

It has been proved abundantly in the United States that high speed is a first-rate advertisement, and repays itself amply not only in the loading of the high-speed trains themselves, but in attracting custom generally to the railway. Although our line occupation clearly cannot stand any large number of super-high-speed trains, there is surely room not only for fast expresses, but also for long-distance non-stop runs, without completely tangling things up. Can one really visualise the "Cornish Riviera" stopping at Reading, Westbury, Taunton, Exeter, and Newton Abbot to Plymouth, or the "Flying Scotsman" stopping at all the junctions (and presumably taking some 18 hr. to reach Edinburgh)?

Yours truly,

A. L. HAWKER

[The article did not suggest equal speeds for all trains, but "as little variation as possible in the speeds of all trains," which implied the introduction of more vacuum braked freight trains. At present the "Flying Scotsman," with four stops, takes 8 hr. 17 min. from London to Edinburgh, not 18 hr. as suggested by our correspondent. All expresses on the former Midland Railway stopped at Leicester, giving this city an excellent service without incurring any extra train-mileage. A high-speed luxury train may show a good paper profit, but to be convincing its profit and loss account should be debited with the passenger fares depleted from other trains, and with the cost of clearing the line of other traffic in order to leave an open path for the "flier," and increased wear of track.—ED., *R.G.*]

23, Somertrees Avenue, S.E.12. January 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The editorial article on "Timetable Revision," in your issue of January 9, seemed to me to be most opportune, as although good chances for a complete recasting of passenger train services undoubtedly were lost in 1919 and 1945, an even better opportunity now presents itself, with the additional stimulus—as you so rightly emphasise—of a shortage of engines and rolling stock.

I was pleased to see your reference to workings on the former Midland Railway. Some of these arrangements dated right back to the day of the "John Noble" trains between London and Yorkshire, and had the schemes (prepared during the 1914 war) for the gradual restoration and improvement of passenger services, after 1919, been put into operation, the user would have been far better than it was at the date of the Grouping, and the public would have had almost the equivalent of the 1937 service, though without its more sensational features, long before that date.

The effect on the line of "high-speed luxury trains," always provided they work to time, is perhaps not quite so great as is commonly supposed (and urged by their opponents)—witness the fact that the L.N.E.R. was able to work three such trains over the main line from Kings Cross to Doncaster at 4.0, 5.30, and 7.10 p.m.—and I do not see how it would be possible to avoid variations of speed in the passenger service, or to cater satisfactorily for the public with "8- or 10-coach trains, all calling at certain principal stations." The result would be—to quote an old Southern example—the 9.30, 11.30, 1.30, 3.30, and 5.30 from Waterloo to Bournemouth, without the 10.30, 12.30, 2.30, 4.30, and 6.30.

Some acceleration is plainly needed on 150- and 200-mile "business" routes, main-line and cross-country, where a double journey is made in the day with three or four hours for business in between, and a saving of half-an-hour on a 3½-hr. run is much more valuable, commercially, than one of an hour on an 8-hr. journey. But such trains could, and should, be "limited load" services (as they almost invariably were on the Continent), and the additional cost of their working might, perhaps, be met, or partly met, by a compulsory seat-reservation fee, as in the case of the "Coronation Scot" prior to 1939.

I believe the importance to the public of a regular interval express service, apart from its operating advantages, to be very great, and now that the services over all parallel (and once competitive) routes become one, the time is ideal for its institution. The "claims of intermediate towns"—always quoted in the past as a fatal objection to such a scheme—can be met quite easily in a *new* service (not the patching-up of an old one!) whose compilers appreciate the fact that every main line has a duty to certain areas of the country, and that long non-stop runs are only justifiable where there is always a through loading.

Your remarks on through carriages also are fully warranted. Either the through carriage creates a demand which soon justifies a through train—you will recollect how the "Sunny South" grew, early in the century, from a carriage to a complete train in less than a year—or they are not worth the operating troubles entailed by their running, and the Continental practice of serving every important branch or cross-country line by at least one through train daily, into which the traffic very soon concentrates itself, is infinitely preferable.

Yours, etc.,

R. E. CHARLEWOOD

Tasks of the Railway Executive

Frognal, N.W.3. January 19

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In your January 16 issue you published an article by Mr. T. Lovatt Williams on the "Tasks of the Railway Executive." You were careful to state in an editorial that *The Railway Gazette* did not associate itself with all the views of your contributor, but I cannot help feeling that you might have used the blue pencil with advantage, for the article is unfair to the staff who have carried on the work of our railways during the last three or four years of discouragement and uncertainty.

Mr. Williams writes with more emphasis than discretion. The Railway Executive does not represent the directors of the old companies. The Transport Commission may be said to do so, but the Railway Executive takes the place of the general managers, and will have to supply to the regional and departmental officers the guidance which previously radiated from the principal headquarters office of each railway. Just as under Government control the companies were restricted in many ways, so the Railway Executive will be confined to the running of essential train services, to scanty programmes of rolling stock renewals, and to the bare maintenance of the permanent way.

Mr. Williams asserts that the public is definitely "anti-railway" and expects great things of nationalisation. He imagines that this same public will turn "pro-railway" if booking halls and waiting rooms are brightened, refreshment rooms improved, and cross-country services introduced. Actually the railways have done a good deal in the first two matters despite difficulties about equipment, labour, and food supplies. In most districts cross-country services are best left to road transport, linked to main-line train services. All three things concern only a fraction of the travelling public. They are entirely subordinate to the staple business of passenger-train working, and the most that can be hoped for is a more punctual service.

Twice Mr. Williams speaks about the passenger as paying the fares on which the railways subsist. In normal times passenger fares represented only 35 per cent. of the total operating receipts. It was then the traders, not the passengers, who kept the railways going on the whole. Outside critics are apt to overlook the importance of goods and mineral traffic working. If the Railway Executive can increase the mobility of freight trains, they will confer a boon on industry.

The articles in the same issue of *The Railway Gazette* on Southern all-steel stock, and on all-steel wagons, North Eastern Region, are a sufficient answer to Mr. Williams' theory that railway engineers are wedded to ancient ways. He seems to be unaware that special attention has been paid recently to production engineering, but thirty years ago an eminent railway mechanical engineer reorganised Woolwich Arsenal, and during both world wars the railway workshops did magnificent work for the Government.

Yours faithfully,

R. BELL

The Scrap Heap

STAMPS SAVE STATIONERY

To use up stationery stocks, printed before railway nationalisation, 6,000 rubber stamps for overstamping printed headings have been distributed to stations and offices in the Western Region. They were manufactured from 100 cu. ft. of timber, supplied by special permit.

* * *

PIE IN THE SKY

It is as well to be cautious in accepting these theoretical prophecies. In 1944 Lord Beveridge wrote a massive and most authoritative book on "Full Employment."

He prophesied, in this work, that 1948 would be the first normal post-war year: that national income would be 20 per cent. higher than in 1938; that a standard rate of income tax of 5s. 10d. in the pound would balance the Budget and provide all the pre-war services and the whole apparatus of the Beveridge schemes.

In 1944 that was pie in the sky. In 1948 it is still pie in the sky.—*From "The Evening News."*

* * *

ST. PANCRAS FOR SCOTLAND

When the old Midland pushed north from Leeds *via* Hellifield to Carlisle it joined hands with the G.S.-W.R. for Glasgow and the N.B.R. for Edinburgh and the north. These three had the enterprise to run the best dining-car trains in Great Britain in 1893, "boomed" by superb posters. The highly-coloured big ones of Princes Street and the Burns country fascinated a poor Cockney boy and led to a joke in sober earnest. On St. George's Day the master ended a patriotic outburst, "Can any boy tell us a finer cry than 'St. George for England'?"

"Please, sir, yes," said a voice, "St. Pancras for Scotland!"—*Norman D. Macdonald in an article "Forerunners of the L.M.S." in "Scotland's Magazine."*

* * *

WRONG REGION

The writer of "A London Diary" in *The New Statesman & Nation* said recently in recording some holiday travel experiences at Paddington that he had watched the departure of the "Holyhead express." His slip provoked the following rhymed rejoinder, with its editorial explanation of the mistake, in the correspondence columns of the next issue:—

Oh, Mr. Porter, What Shall I Do?

I always thought that *Euston* was the
proper place to queue
For *Holyhead*, and *Rugby* and stations
north of *Crewe*,
So imagine my confusion when I found my
"line" was wrong
And was sent across to *Paddington* to join
another throng.
The engine there was blushing *Red* on finding its mistake,
Reversed itself, and slowly tried its usual
route to take,
But on to *Reading*, *Swindon*, in its unfamiliar sheen,
Whistling so plaintively for the wearing o'
the *Green*.

Apologising for bringing this to your notice, I still maintain that if you saw the Holyhead express at *Paddington*, you had been celebrating Christmas well in advance.

SIDNEY L. BIRCH,
84, Homeside Road,
Bromley, Kent.

[Polycritic replies: "Sorry; for Holyhead read Birkenhead."—ED., *N.S. & N.*]

During a railroad strike in England a volunteer engineer on the London-Liverpool express performed the remarkable feat of bringing the train into Liverpool 25 minutes ahead of time. The passengers went forward in a body to thank him. A pale face emerged from the cab. "Don't thank me," it gasped, "I only found out how to stop this thing five minutes ago."—*From the "Rhodesia Railways Bulletin."*

* * *

BLAMES BRITISH TRANSPORT COMMISSION

Protesting against "the disgraceful way" in which four Ramsgate taximen were arrested for plying for hire from the station forecourt on January 1—nationalisation day on the railways—Mr. Charles Doughty said at Ramsgate "the price of liberty is eternal vigilance. If we are not careful with bodies like the British Transport Commission we shall have citizens dragged around in this disgraceful manner.

"I hope the magistrates will teach this bureaucratic body a lesson by showing them that respectable citizens are not to be brutally arrested in this way."—*From "The Evening News."*

* * *

100 YEARS AGO

From THE RAILWAY TIMES, *Jan.* 22, 1848

RAILWAY SIGNALS

To the Editor of the Railway Times

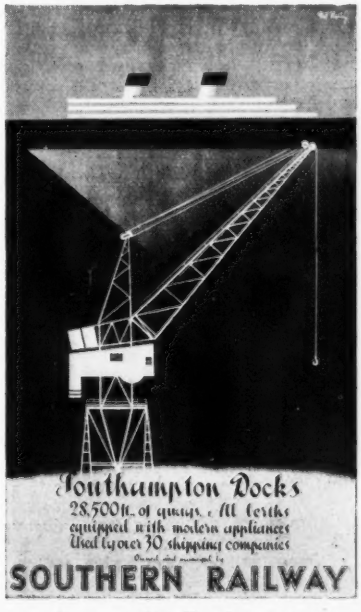
SIR,—The late frightful accident on the South-Western Railway proves that lamps, either exhibited from the rear of trains, or by persons on the line, are not sufficiently conspicuous to attract attention, so as to cause a train to be stopped in time to prevent collision. Having, in the course of a long service in fleets at sea, experienced the great advantages of the "blue light" as a night signal, I would suggest that it might be tried on a railway; and, in my opinion, it will be found exceedingly useful. It is easily and quickly lit, illuminates in the most powerful manner to an immense distance, and will burn with ease for a considerable time. Such a signal, in the hands of the deputy-guard of the train on the South-Western Railway, must have excited attention, and would most likely have averted the late sad catastrophe.—Yours, &c.,

BLUE LIGHT.

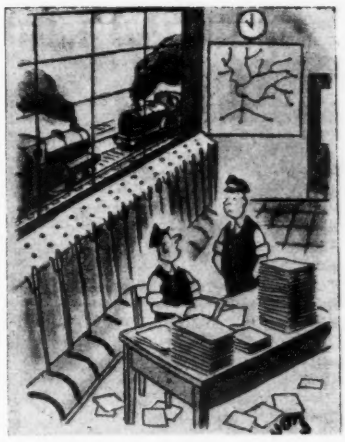
London, Jan. 19.

* * *

Railway Progress



A pre-nationalisation poster



"This is a fine way to run a railway—nothing but forms, forms, forms!"

(From the "Evening Standard")

ENTER THE OWNER AT KINGS CROSS

It was a little before half-past two in the morning. The scene: Kings Cross Station, on what used to be the L.N.E.R. Steam was up on the 2.34 a.m. newspaper train to the North. Bundles were being thrown into the vans. And then on to the platform and into the carriage reserved for railway employees walked the Man Who Said He Was an M.P. With him was his brother.

A ticket collector saw them and said: "I'm sorry. This train is not for passengers."

At that the Man Who Said He Was an M.P. was angry. "You have no right to turn me off," he said.

So the ticket-collector called the guard, and the man Still Said He Was an M.P., and he still wasn't getting off the train. So the ticket-collector and the guard called the Assistant Station Master.

To him the Man Who Said He Was an M.P. complained loudly: "I have been sitting in the House until 2 a.m. I want to get home."

But the Assistant Station Master knew better than that. The House wasn't sitting just then—it was January 8. Seven days earlier the railways had been nationalised.

So the Assistant Station Master called the Railway Police and asked them to remove the unwelcome passengers.

As they tried to pull him out, the Man Who Said He Was an M.P. announced: "The railways are nationalised. They belong to me and to everyone. I can do as I like now."

Then the Assistant Station Master had an idea. The front part of the train drew out. Back came the engine and towed away the carriage to a tunnel.

And there in the darkness the Man Who Said He Was an M.P. was left for half an hour to discuss with his brother the problems of owning a railway.

He was still angry when they brought him back. They had to threaten to shunt him into a siding if he didn't leave.

So eventually he agreed—and eventually left for home on the 4.25 a.m. with a few other owners of the railway.

The matter may not rest there. The Railway Executive is considering what steps can be taken against the Man Who Said He Was an M.P.—*From "The Daily Mail."*

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

CANADA

Rising Costs and C.N.R. Future

Reviewing the events of 1947, Mr. R. C. Vaughan, Chairman & President of the Canadian National Railways, estimated that gross revenue of the system would amount to $436,883,000. This would be greater than in any peacetime year, but after payment of operating expenses (and before charging interest) net revenue would be lower than in 1946 at approximately $39,031,000. The reason was the rise in costs. There had been an all-round increase in materials prices of 12·8 per cent.; the payroll was higher by $22,184,603; fuel for locomotives cost $4,230,000 more; and the severe winter of 1947 had added $1,900,000 to expenses for snow removal, which had totalled more than $5,000,000.

Increased traffic would not by itself offset rising costs and halt decreases in earnings. In Canada the railways had not been granted any upward revision of basic goods or passenger rates, and the application for a 30 per cent. rates increase was still under consideration. Meanwhile operating costs continued to mount, and this would result in a deficit for the year after all interest charges on Government loans were taken into account.

Mr. Vaughan discussed the goods wagon position, which would remain difficult in spite of deliveries of new equipment if industrial and agricultural output continued at their present levels. They actually needed more wagons now than in wartime, because vehicles sometimes were not loaded to capacity, and others had to remain idle when they should be working because of shorter hours in industry.

Despite all problems, much ground lost during the war had been regained. Extensive repairs had been made to track and structures, and it was hoped this year to place orders for various types of passenger vehicles that were not obtainable during 1947.

UNITED STATES

C. & O. Turbine-Electric Locomotive

After being exhibited in Washington, D.C., on December 1, the new steam turbine-electric locomotive for the Chesapeake & Ohio has been making a tour of 12 cities on that company's system. This is the first of three identical locomotives which are being built for the C. & O. by the Baldwin Locomotive Works, and which are expected to be placed in service this year on daytime trains between Washington and Cincinnati.

Milwaukee Diesel Orders

The purchase of 38 new diesel-electric locomotives, at an estimated cost of $6,288,000, has been authorised by the Board of Directors of the Chicago, Milwaukee, St. Paul & Pacific Railroad. The order comprises eight 3,000-h.p. freight locomotives, six 2,000-h.p. passenger locomotives, twenty 1,000-h.p. shunters, and four 1,500-h.p. locomotives designed for either shunting or main-line service.

When the new locomotives are in service, all Milwaukee through trains between Chicago, Milwaukee, St. Paul and Minneapolis will be diesel-hauled. Diesels will then be introduced on all the company's passenger trains between Chicago and Madison (Wis.); and between Mason City (Ia.) and Sioux Falls (S.D.).

Acquisition of the 20 shunting locomotives will contribute materially to the company's programme of diesel operation at its terminals. The addition of the new fleet will bring the number of diesel-electric locomotives on the Milwaukee system to 175.

CHINA

Tsinan-Pukow Restoration

The 372-mile Tsinan-Pukow section of the Tientsin-Pukow Railway was formally opened to traffic for the first time since VJ-day last December. The repair of the major part of this north-south line linking the two coastal provinces of Kiangsu and Shantung was completed soon after the resumption of through traffic on November 28 on the Hunan-Kwangsi Railway, a 332-mile artery in South-West China.

Compared with the rehabilitation of the railway in South-West China, which encountered no interruptions once work was begun, the restoration of traffic on the railway running through southern Shantung represented a major achievement in reconstruction. This section was torn up three times by the Chinese Communists since the Japanese surrender. [A map of the line appeared in our September 13, 1946, issue.—ED., *R.G.*]

The Communists first disrupted the railway running northward from Hsuchow, in northern Kiangsu, to Yenchow, in Central Shantung, in September, 1945. The damage was hastily repaired by October 10 of the same year. Two months later, the Communists wrecked the line for the second time. Repairs were effected again by the end of April, 1946, but the Communists sabotaged the same section of the railway for the third time in June, 1946.

After completion of repairs on the Hsuchow-Yenchow section, rehabilitation began last June of the section further north, running from Yenchow to Tsinan, capital of Shantung province. Before the final completion of the repairs by the end of November, 1947, military operations had forced the suspension of work several times.

Communist troops are still active along the railway near Tsaochwang and Linchen, in southern Shantung, but the Government has placed sufficient troops to ensure safety of rail traffic across the 372 miles from the northern bank of the Yangtze to the southern bank of the Yellow River.

INDIA & PAKISTAN

Improving the Transport of Coal

Acute shortage in the supply of coal is one of the main problems now confronting India. The Government is sparing no efforts to remove transport bottlenecks, which are blocking the major coal-producing areas of Bihar, Bengal, and the Central Provinces. Reports from New Delhi point out that 600 miles of new track, costing Rs. 18 crores (£13·5 millions) are planned for reinforcement of the existing railway facilities. Moreover, railway lines in several important coal-distributing centres are being doubled.

The construction of a 140-mile line between Barwaddih, on the E.I.R., and Chiriimiri coalfields on the B.N.R., is reported to have been taken in hand. The line is expected to be completed by April, 1949. The network of metre-gauge railways in North India also is intended to be linked up with the metre-gauge section in South India. Further, a survey has been carried out in connection with the extension of the line from Khandwa (Central Provinces) on the G.I.P.R. to Hingoli, in Hyderabad (Deccan) on the Nizam's State Railway.

Proposals to build a 100-mile line between Gaya and Karkakhanna, and a bridge over the Ganges at Patna, both located on the E.I.R. system in Bihar, are now under the consideration of the Railway Board.

Various measures for the improvement of coal transport in the United Provinces are nearing completion. The sections of railway between Malihabad and Bareilly, and between Hardoi and Kahilia, have been doubled at a cost of Rs. 2½ crores (£1,875,000). An additional track has been laid on the Dufferin Bridge between Moghul Sarai and Benares to facilitate the movement of a larger volume of traffic north-west of Moghul Sarai. Remodelling of stations and marshalling yards also are being undertaken to facilitate early and easy transhipment.

New Stock for Indian Railways

During the course of the debate on the Indian Railway Budget (see *The Railway Gazette* of January 9), Dr. John Matthai, Minister of Transport, revealed that more than 2,000 coaches had been ordered from abroad and were expected in the next two or three years. He was replying to members of the India Assembly who had criticised overcrowding in trains. The Minister also explained that the Government had utilised all the facilities available in railway workshops, as well as other factories in the country, for the purpose of making new coaches.

During question time, the Minister stated that top priority had been given for the manufacture of locomotives in India. The work in the Kanchrapara factory, biggest of its kind in India, had to be suspended in June, 1947, owing to its proximity to the Pakistan border. Since then, the Minister added, surveys of alternative sites, in the vicinity of Asansol, had been ordered, and were now in hand, and indents for the purchase of machinery and plant had been placed.

SOUTH AFRICA

Progress of New Works

Railway engineers and technicians are working on 31 improvement schemes in the Transvaal. They will cost over £16,000,000, and are intended to provide adequate services for present and future industrial demands on the Reef, in Vereeniging, and in the new goldfields area of the Orange Free State.

One of the main improvements, so far as Jonhannesburg is concerned, is the increase in the carrying capacity of the old Rand mineral line, which connects Langlaagte, Canada Junction, Elsburg, and Germiston, to the south of the city. Between India and Jupiter the line will be doubled, and between Canada and Booysens the number of tracks will be increased to four. When this work has been completed, no steam trains will pass through the new station at Johannesburg.

All the goods train traffic will be diverted on to the southern line, to make use of the new Prospect Goods Yard,

now under construction; and passenger trains will travel the length of the Reef under electric power.

POLAND

Reconversion to Standard Gauge

The terms of the Polish-Russian Treaty of Friendship, signed early last year, provided for the reconversion to standard gauge of the broad-gauge line running eastwards from a point 18 km. west of Katowice, through Cracow, to Przemysl. This work was carried out between October 15 and November 22, during which period traffic was restricted. As from November 23, the line has been operated only with standard-gauge stock.

FINLAND

Traffic through Russian Zone

Negotiations between Finland and the Soviet Union for the resumption of limited train services on the Helsinki—Turku (Abo) main line through the Russian-leased Porkkala Territory, to the west of the Finnish capital, were broken off in June last, but were resumed subsequently. An agreement was reached early in November, and the working of Finnish trains across the Russian-leased zone was begun on November 10. While in transit through the zone, all windows of the Finnish passenger coaches must be closed, and blinds have to be kept drawn. Sweeping rights of inspection of passengers' papers and luggage are stated to have been insisted on by the Russians. In transit through the zone, the Finnish trains are hauled by Russian locomotives.

The Helsinki—Turku main line is 126 miles long. The eastern frontier of the zone is about 12½ miles by road from Helsinki, and some 16·8 miles by railway. The journey through the zone is about 23·6 miles. While the zone was closed, traffic between Helsinki and Turku used the roundabout route running north to Hyvinkaa (37 miles from Helsinki), then turning south-west to join the main line at Karjaa. The distance between Hyvinkaa and Karja is 62 miles. Fast trains using the direct Helsinki—Turku main line gain about 50 min. as compared with the time required *via* Hyvinkaa.

GERMANY

Deterioration of Russian Zone Services

According to recent reports originating from the Russian-occupied zone, the dismantling now totals more than 50 per cent. of the tracks in that part of Germany. Rails and sleepers, signalling telecommunication equipment, and everything else belonging to the lines affected went East. The same holds good of the electrified lines which had been earmarked for dismantling. Thus, it is stated that nothing has been left of the electric equipment of the former 77-mile main line (now reduced to single-track) from Leipzig, *via* Halle, to Magdeburg; nor of the 74-mile main line connecting Leipzig and Magdeburg *via* Dessau (74 miles), also reduced to single-track; nor of the former 86·9-mile double-track main line between Leipzig and Saalfeld (*via* Naumburg), which now has one track only. The electric locomotives belonging to these lines are said to have been taken away as well.

Railway working in the Eastern Zone is reported to labour under conditions which do not allow of any comparison with other railway systems. Also, because of the serious deterioration since December 1, 1947, passenger services from Berlin to the various regions of the zone have been reduced to four long-distance through trains ("D" trains) and 20 stopping trains a day. There is, in addition, one interzonal train a day (for Hanover); one weekly fast train for Warnemünde (for the ferry route to Denmark); and one weekly fast train for Sassnitz, serving the recently resumed ferry route to Sweden (see *The Railway Gazette* of September 26, 1947).

The 24 daily trains leave Berlin from three main termini and four local stations of the S-Bahn. Before the war, nearly double that number of trains left the Anhalter-Bahnhof alone every day. The December 1 timetable eliminated through connections between Berlin and Leipzig, and travellers between these two towns have to change trains at Bitterfeld, 20¼ miles north of Leipzig (32·7 km.). The journey between the two towns now takes 8 hr., as compared with 3½ hr. before December 1, and 2½ hr. by the slower fast trains in service during the war. Chemnitz, the centre of the textile industry of Saxony, 152 miles from Berlin, is now 14 hr. from the German capital, and Zwickau, 176½ miles from Berlin, is now reached in 25 hr.

SWEDEN

New International Trains

A new train, the "Baltic-Orient Express," will be introduced next summer to provide through communication from Stockholm to Eastern Europe. Through carriages will operate from Stockholm *via* the Trelleborg ferry, the southern terminal of which will be transferred at the end of the present year from Gdynia to the new Polish port of Odra. From Odra, it is probable that the Stockholm vehicles will proceed to Warsaw, Belgrade, and Prague.

The main portion of the "Baltic-Orient Express" is planned to serve Poznan, Wroclaw, Budapest, Belgrade, and Sofia. Although through coaches will not run to Istanbul at first, connections will enable the Stockholm-Istanbul journey to be made in about 100 hr., as compared with 150 hr. by the present route *via* Paris.

Another change in the next summer timetable will be the running of the Stockholm-Basle section of the "Nord Express" as a separate train, the "Scandinavia-Switzerland Express," terminating at Zurich.

The ordinary coaches of the train will run through to Lucerne from July 1 to September 10. A through carriage between Stockholm and Amsterdam will be attached to the "Scandinavia Express" next summer.

LUXEMBOURG

Prince Henri Company Dissolved

As reported in *The Railway Gazette* of September 12, 1947, one of the two former railway concessionnaires in Luxembourg, the Prince Henri Railway Company, refused to approve the transfer of its system to the Société Nationale des Chemins de fer Luxembourgeoise, on the grounds of the unwillingness of the S.N.C.L. to pay compensation for the withdrawal of the concession. Towards the end of November last year, however, a general meeting of the shareholders of the Prince Henri company decided to recognise the transfer, following a declaration by the Luxembourg Government that it would pay compensation for the withdrawal of the concession.

It is reported that this change in the attitude of the Luxembourg Government was due to Belgian pressure, and that it meant abandoning the contrary conclusion arrived at by the commission of Swiss experts mentioned in the previous report. The Luxembourg Government, taking over the whole of the company's assets and commitments, is to pay a compensation of fr. 1,700 (Luxembourg) per share (something less than £10) in the form of 4 per cent. debentures from the Luxembourg State Loan of July, 1947. According to the shareholders' decision, the company is to be dissolved.

SWITZERLAND

Traffic by Centenary Train

The pleasure trips by the Swiss centenary train, which proved one of the most popular and successful features of the railway centenary celebrations, were concluded last October. Between April 20, when the first trip was made, and the end of October, the train covered 13,801 miles with passengers, in addition to a further 1,366 miles in the course of transfer between different lines.

Trips were run on 170 days, the average number of passengers carried per day amounting to 1,738, while the average per journey was 210 passengers. Altogether 307,868 passengers were conveyed. The cost of building and working the train, some fr. 400,000 (slightly more than £23,000), is stated to have been covered by the fares paid by the excursionists.

The train and the locomotive are to be housed in future either in a shed at Rapperswil Station, or else at Wettingen Station (on the Zurich—Baden main line, about one mile outside Baden). The train was illustrated in *The Railway Gazette* of July 11, 1947.

ITALY

Reconditioning Electrified Main Lines

Special efforts are being made to complete the reconstruction of the 60·2-mile Bologna-Florence main line (*via* Vernio), where traffic is still confined to one track over certain sections. Moreover, with a view to improving the handling of goods traffic at Bologna, where five main lines converge (from Florence, Milan, Verona, Venice, and Ancona), it is desired to complete the new marshalling yard as early as possible.

Reconstruction of the avoiding goods lines to the east of Bologna also is being pushed ahead actively. It is hoped to complete the rebuilding with double track and restoration of electrification on these avoiding loop lines before the end of June, 1948, and so, by the separation of passenger and goods traffic through Bologna Central, to relieve the present congestion.

It is thought also that electrification and double track will be restored on the Bologna-Rome and Rome-Naples main lines by the same date, and thus pre-war conditions will be restored over the whole main artery connecting Milan with Bologna, Florence, Rome, and, further south, with Naples and Battipaglia, a double-track electrified line 571 miles long. Of this total, the Milan-Rome section accounts for 392½ route-miles, and the Naples-Battipaglia section for 46 route-miles.

Last L.N.E.R. Third Class Sleeping Car

Accommodation of an intermediate stage between that of present first and third class sleeping cars

JUST before the L.N.E.R. ended its separate existence, the first of six third class sleeping cars of a novel design was completed at Doncaster Works, under the supervision of Mr. A. H. Peppercorn, Chief Mechanical Engineer.

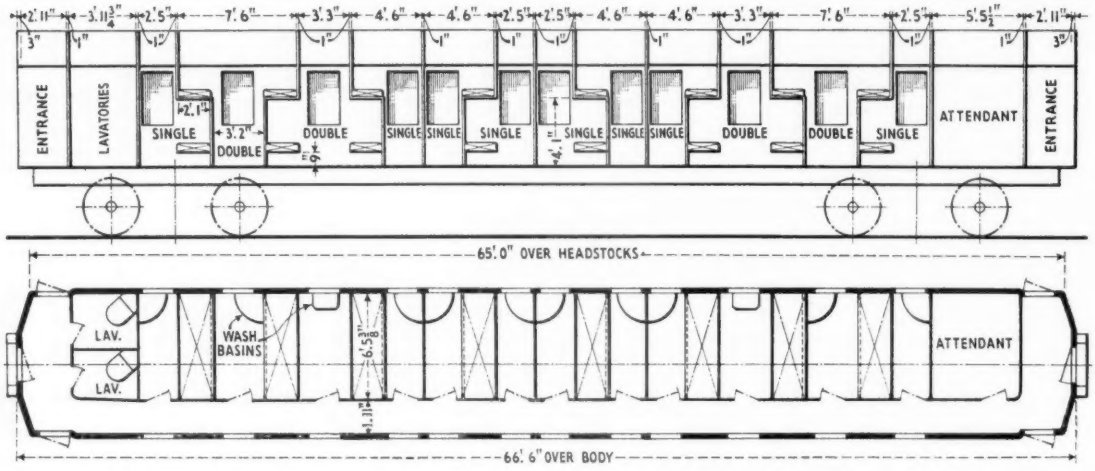
The new vehicle contains both single-berth and double-berth compartments equipped with full bedding and individual wash basins, and it represents an intermediate stage between present first and third class sleeping cars. Previously on British railways, third class sleeping cars have provided only lying-down accommodation, with rugs and pillows, based on four berths to a compartment.

An ingenious "interlocking" principle shown in the accompanying diagram has been adopted in the layout of the new car, and provides sleeping accommodation for 16 passengers in 8 single and 4 double berths. Two toilet compartments and an attendant's compartment also are included in the new coach.

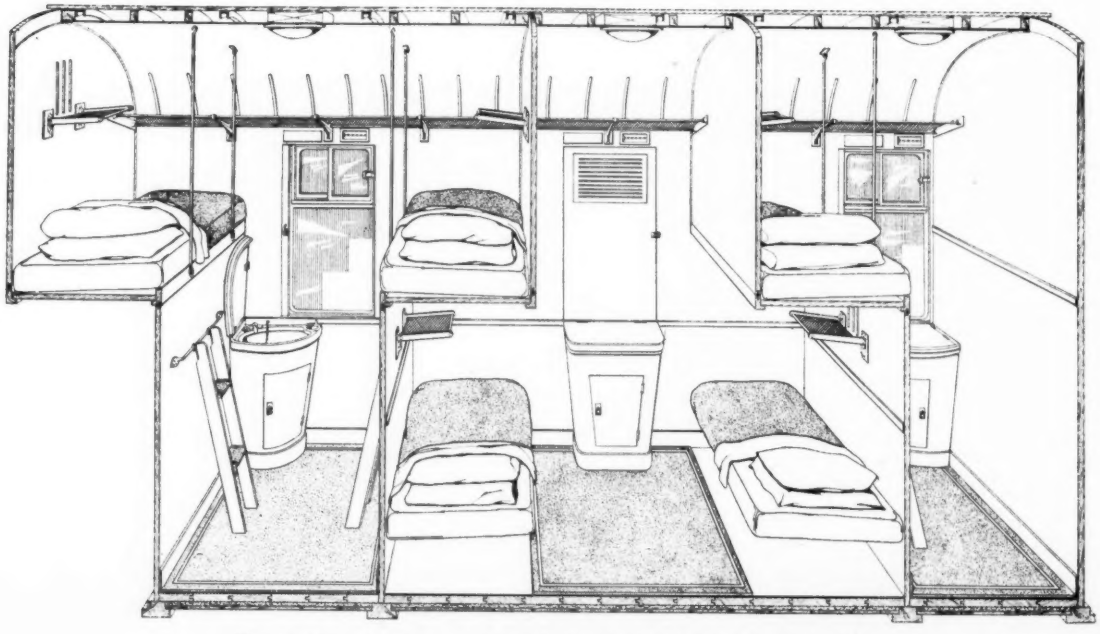
Standard L.N.E.R. practice has been followed in the general construction of the car: it has a steel-panelled timber-framed body mounted on a rigidly trussed underframe, which is carried on two bogies of the compound bolster type, having a wheel base of 8 ft. 6 in., and a journal size of 10 in. × 5 in. Buckeye couplers and Pullman vestibule gear are fitted.

The main dimensions of the new vehicle are: total length over vestibule 68 ft., length over body 66 ft. 6 in., length over headstocks 65 ft., extreme height 12 ft. 10 in., bogie centres 47 ft. and width over body at waist 9 ft. 2¼ in. The total weight is 41 tons.

Thermotank heating and ventilating equipment has been fitted, and a Punkah Louvre at the head of each bed enables passengers to regulate the flow and temperature of the incoming air. Ordinary steam heating also has been fitted, so giving a choice of alternative systems, or a combination of both.



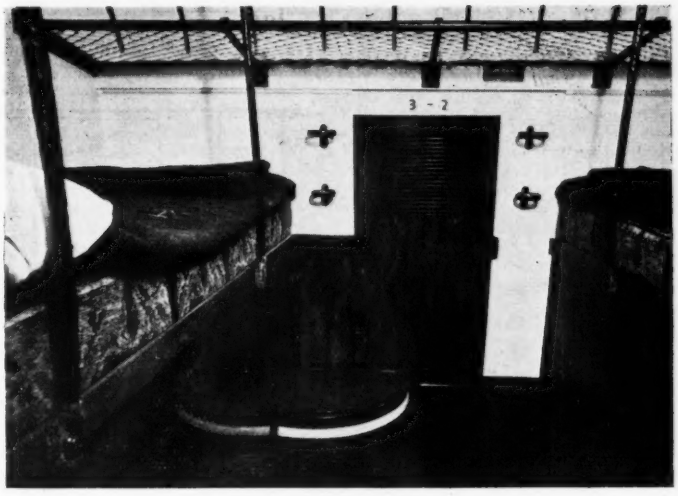
Dimensions and layout of the new third class sleeping car



View with corridor screen removed, showing the interlocking principle

Current for the water-heating equipment is generated by a 50 volt, 100 amp. dynamo, and the current for lighting and the ventilating system by a 24 volt, 125 amp. dynamo; both are driven by belts from pulleys mounted on the axles. Two banks of cells are provided to form the necessary storage capacity, that for the water heating equipment consists of 25 cells of 279 amp. hr. capacity, and for the lighting 12 cells of 360 amp. hr. capacity.

The new vehicles are experimental, and they will supplement, though will not at this stage displace, the existing third class sleeping cars. The charges per berth have not yet been fixed, but probably will be in the region of three-quarters of the present first class fee in the case of a single berth, and half the present first class fee for a berth in a double compartment.



One of the double-berth compartments

Air Circulation Fans for Tube Stock

Overcoming the problem of limited headroom in tube cars with standing passengers

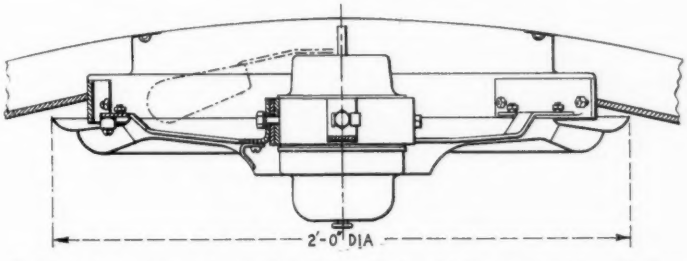
FURTHER details are now available of the air fan installation for tube rolling stock, with which London Transport is experimenting. The available headroom on London Transport surface line rolling stock allows ceiling fans to be fitted without special difficulty, as was demonstrated on cars 17000 and 20000 recently placed in experimental service on the Metropolitan Line (see our February 1, 1946, and July 18, 1947, issues).

On tube stock, however, because of the very restricted headroom, the problem has been more difficult to overcome, and the design of a suitable fan has necessitated considerable thought and development work. An arrangement that is considered reasonably satisfactory, however, has been produced, and four fans have been installed recently in a tube car (No. 10320) of the latest type, which is now running in experimental service on the Bakerloo Line.

The usual type of ceiling fan, having blades beneath the motor, could not be adopted owing to the limited headroom, and would have been a source of danger to standing passengers. It was, therefore, necessary to invert the fan and allow the rotor to operate in the space between the Sundeala ceiling and the car roof. With this arrangement a minimum distance of 6 ft. 3 in. has been obtained between the lowest part of the fan and the car floor.

In order to protect standing passengers from possible contact with the moving blades of the fan, a light-gauge casing has been fitted on the underside, which carries air-deflector vanes round its periphery. The action of the fan is relatively simple, and allows air to be drawn continuously from the car through a central aperture in the fan casing into the sealed cavity in the roof of the car in which the blades of the fan rotate.

The air drawn in is then speeded up and expelled in all directions into the car through the vane control apertures at the edge of the deflector casing. The rotor consists of four 16-in. dia. blades, the angle of which has been set in such a way as to ensure a maximum flow of air into the car.



Fan fitted in inverted position in roof of vehicle to provide adequate headroom for standing passengers

Uniform Air Distribution

The four fans have been arranged along the longitudinal centre line of the car, and spaced symmetrically over its length so as to produce a uniform distribution of air over the whole car. The arrangement of the fan mounting, together with the deflector casing, is shown in the drawing above.

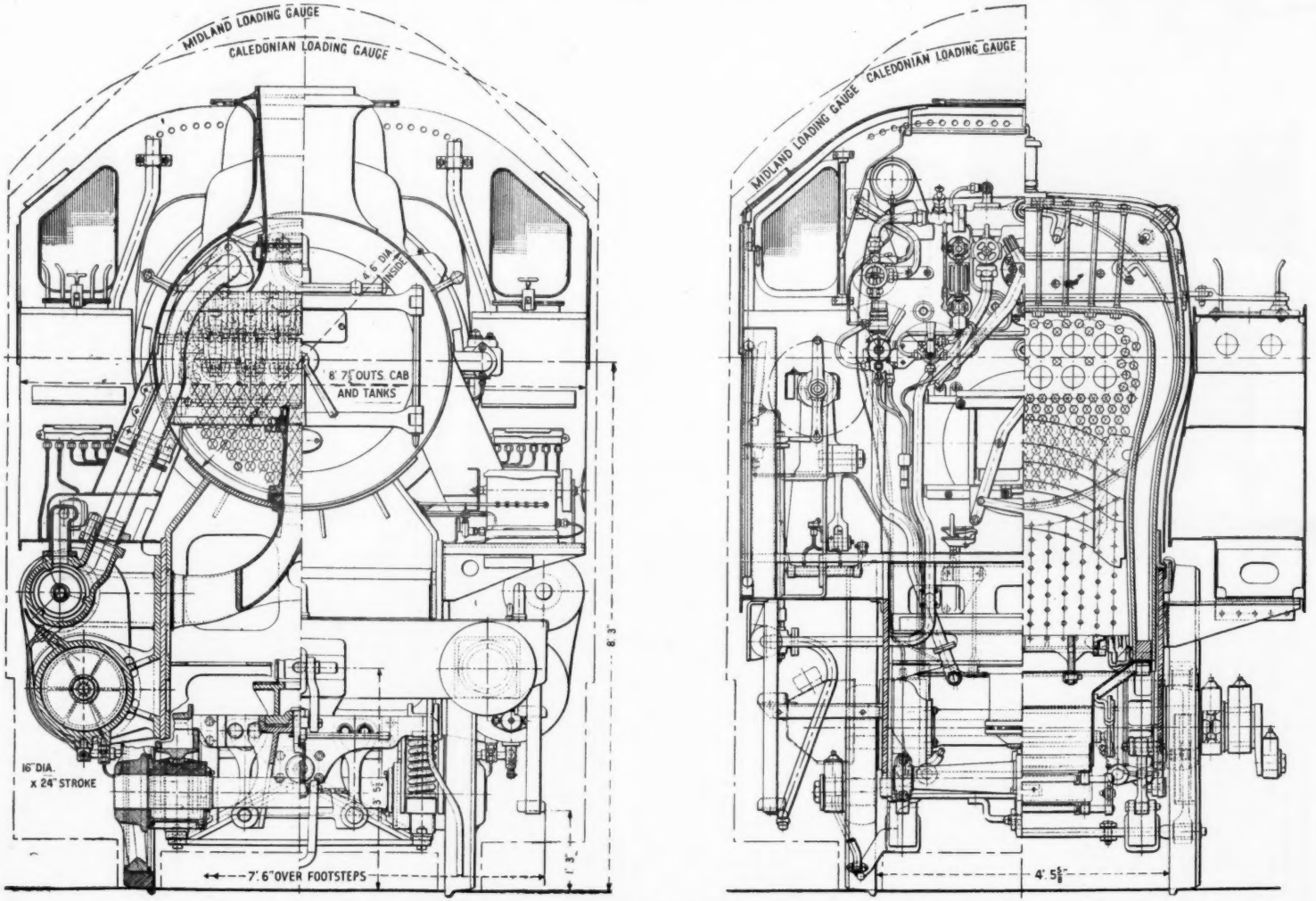
Each fan motor takes approximately 30 watts, and runs at 520 r.p.m. from a d.c. circuit of 50 volts, which is supplied from a motor-generator set used for train lighting and auxiliary control circuits. The fan motors and blades were supplied by J. Stone & Co. Ltd., and the installation was carried out in the London Transport Railway Workshops at Acton.

NEW WAGON REPAIR DEPOT FOR BRITISH RAILWAYS.—Ystalyfera Tinplate Works, which have been bought recently by British Railways, are to be used for railway wagon repairs. Work will begin shortly. A small staff is expected to be recruited locally, but as the depot develops, labour from the neighbouring district will be employed. The depot will be similar to those formerly owned by the G.W.R. in the Port Talbot, Neath, and Swansea areas.

ELECTRIC LAMP INFRA-RED DEMONSTRATION CENTRE.—An Infra-Red Electric Lamp Demonstration Department has been set up by the Metropolitan-Vickers Electrical Co. Ltd. at 132-135, Long Acre, London, W.C.2. Four different types of plant are installed and tests can be carried out on a wide range of articles. The company points out that the total load of these plants is 75 kW., and that they are actual production plants and not merely test panels. The installation includes a 6-ft. spray booth and compressor unit, and the department deals with varied industrial uses for infra-red heating, including paint stoving, moisture extraction, and preheating. Interested executives are invited to bring samples of their products for test.

ANGLO-OVERSEAS TRANSPORT CO. LTD.—The head office of the Anglo-Overseas Transport Co. Ltd. has removed to Market Buildings, Mincing Lane, London, E.C.3 (telephone: Mansion House 8471 (10 lines); telegraphic address: Fournaise, Fen, London). The company's Covent Garden office (50, Long Acre, W.C.2) will be merely a liaison office for urgent inquiries and deliveries in connection with perishable traffic; all other matters will be transacted at the head office. The following branches still operate:—44-46, Leadenhall Street, E.C.3 (South African and Australasian Departments); 13, Eastcheap, E.C.3 (export to Far and Near East, North and South America, and all European countries except Switzerland and Italy); Hooper Square Warehouse (Warehouse & Packing Department). The company has provincial offices at Liverpool, Manchester, Hull, and Bradford.

L.M.S.R. 2-6-2 Tank Engines for Secondary Services



Half-sectional views Left: Front view Right: Showing firebox and cab

L.M.S.R. 2-6-2 Tank Engines for Secondary Services

A robust design built for rapid acceleration and relatively high maximum speeds

WE publish elsewhere in this issue a number of sectional views of the L.M.S.R. Class "2" 2-6-2 tank locomotives, the construction of ten of which was announced in a general description of the new type in our January 3, 1947, issue. A 2-6-0 tender locomotive of similar type also has been put into service.

These engines were the expression of a definite policy of the L.M.S.R. to provide specially designed types for secondary services instead of entrusting such duties to comparatively aged or obsolescent classes formerly engaged on main-line work. It may be recalled that on the L.N.E.R. a similar policy appeared to have been decided on when the Class "V4" 2-6-2 tender engine *Bantam Cock* appeared in 1941; but, probably due to the war, and to the death of Sir Nigel Gresley, the plan was not pursued.

The L.M.S.R. incorporated eminently "safe" and well-tried features without any daring leaps of engineering fancy in these engines, though should it be thought that they are of no special merit, an examination of the sectional views in this issue will show that a design of a very high order has been completed. Every modern development which has been found successful on the larger main-line types has been incorporated, and as the engines are intended for at least thirty years' service, they have been built for rapid acceleration and relatively high maximum speed, so as to be able to keep pace with possible future accelerations. The total weight in working order of these new tank engines is 63¼ tons, of which 39½ tons is available for adhesion. The maximum axle-load is only 13¼ tons.

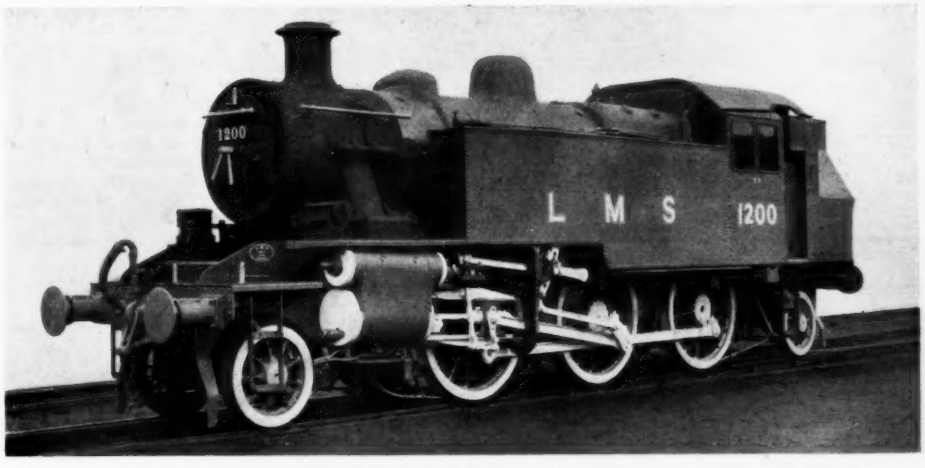
A tractive effort of 17,400 lb. at 85 per cent. boiler pressure gives an adhesion factor of 4·88. To produce this tractive effort, cylinders 16 in. dia. × 24 in. stroke are provided, an attractive piece of proportioning which, together with a long-travel long-lap design of piston valve, shows how well the best features of the Churchward influence were absorbed in the L.M.S.R. outlook. The piston valve heads are placed well apart, to allow the live-steam passages to the ends of the cylinders to be as short as possible. The part-sectional plan illustrates the directness of the exhaust passages, and their wide upward sweep is shown in the part-sectional front view.

The plan view also shows the skilful layout of the valve gear, all the links of which lie practically in the same vertical plane, so that bending effects on the various members are reduced to a minimum. The reversing shaft is in two portions bolted together in the middle, and a large hole is cut in the frame plates to allow the flanged portion at the joint to be withdrawn for repairs. The mechanical lubricators have been placed, because of the length of the side tanks, in rather dusty positions on either side of the smokebox saddle; though this was probably dictated by sheer necessity. Hollow axles are used for the two outer coupled axles; the driving axle is solid, but hollow crankpins are provided in the driving wheels.

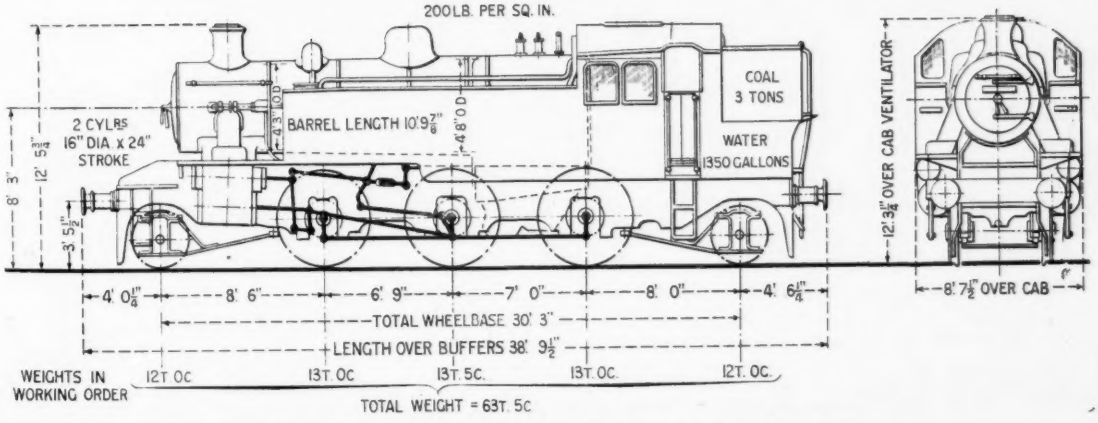
Channelled-section coupling rods were incorporated in the new design. Axlebox wedges, which are so easily justifiable in theory, and yet so troublesome in practice, are absent. Leading and trailing coupled axleboxes work in horn-cheeks only, but full horn-block castings are provided for the driving axle. To prevent that inward-and-outward flexure of the main frames during running, which is held to be a frequent cause of overheated axleboxes, pin-jointed cross-stays link the bottom corner of one horn-cheek casting with that of its "opposite number." Similar devices have been tried at various times elsewhere, though not always with the success hoped for; and locomotive engineers do not seem to be altogether agreed about their general desirability, or, indeed, about the degree of rigidity to be aimed at in the cross-bracing of plate frames.

The boiler is of straightforward design,

(*Continued on page* 110)



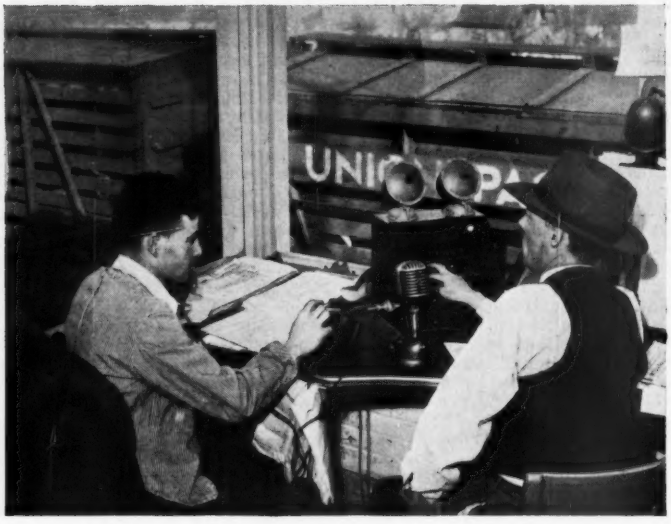
L.M.S.R. Class "2" tank engine



Showing principal dimensions of the above 2–6–2 tank engine

Union Pacific Hump Yard at Pocatello

Air-operated retarders, loudspeakers, and radio communication with diesel shunting locomotives



Loudspeaker control equipment in retarder yardmaster's tower

POCATELLO, on the main line of the Union Pacific from Kansas City and Omaha to Seattle, is near the junction with the Los Angeles route, and also with lines radiating northwards to Butte, Mackay, and West Yellowstone.

A new hump marshalling yard has been opened recently at this point, providing 28 sorting sidings with a capacity of about 900 wagons. Vehicles running down from the hump to the sidings are controlled by air-operated retarders, of which there are seven in the yard.

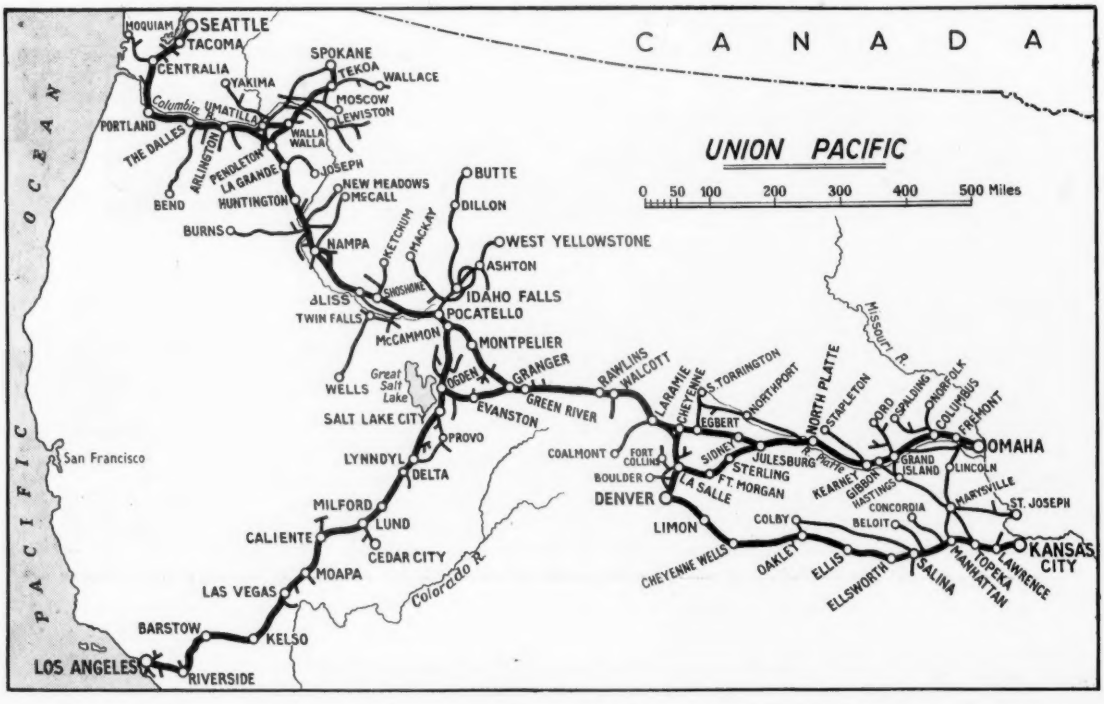
The formations of incoming trains from east and west are received by teleprinter at the Pocatello telegraph office, from which they are relayed to the retarder yardmaster's tower (at the top of the hump), three control towers, and the general yardmaster's office (at the far end of the yard). Operation of the retarders and points is divided between the three control towers. Arriving wagons are propelled over the hump by diesel shunters.

An extensive communication system is installed throughout the yard. Twelve large loudspeakers are operated from the general yardmaster's office, and one from the retarder yardmaster's tower. In addition there are 73 intercommunication loudspeakers, permitting two-way conversations, of which 63 are controlled individually from the general yardmaster's office and nine are on a combined circuit originating at the retarder yardmaster's tower.

Communication with the six diesel shunters operating in the yard is provided by radio. The locomotive equipment is tuned to two frequencies, one for working with the general yardmaster's office and the other with the retarder yardmaster's tower. The frequencies used are 160·29 Mc/s. and 160·41 Mc/s. respectively.

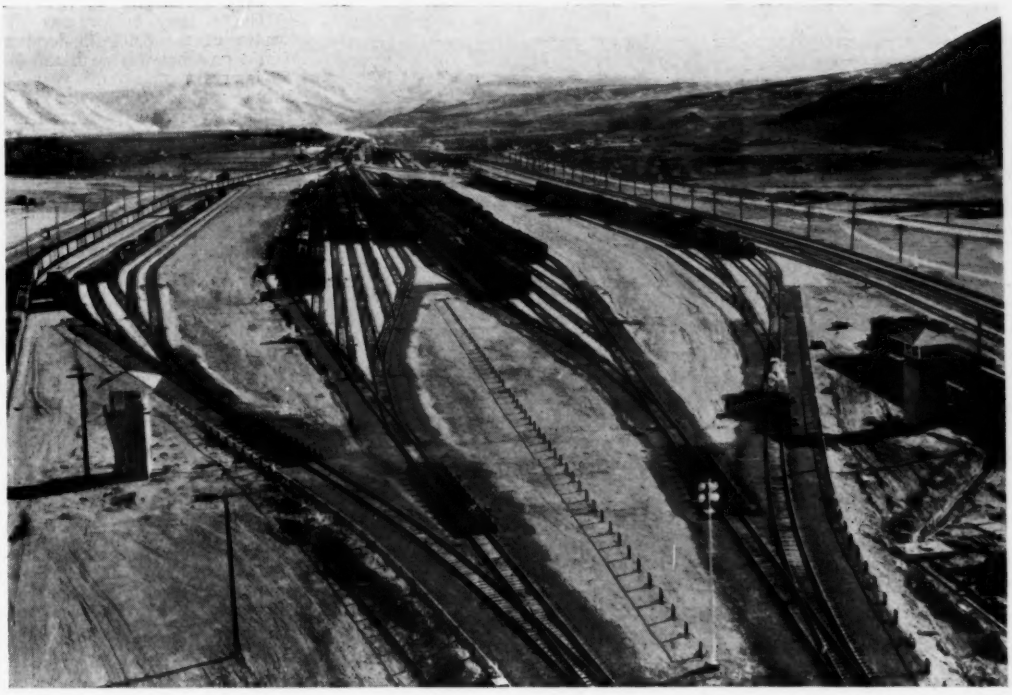
After incoming wagons have been distributed to their appropriate sidings in the hump yard, they are transferred by the shunting locomotives to the departure yard, beyond the general yardmaster's office, ready for movement in trainloads east or west.

EFFECT ON HOTELS OF BASIC PETROL ABOLITION.—At a press conference on January 15, Sir Stafford Cripps said that wholesale reduction of motoring, and the abolition of pleasure motoring, were bound to have an adverse effect on the business of hotels. This loss of business would affect their finances, and may make it difficult for them to provide furnishings, fittings, and so forth, that visitors from overseas might expect to find, and to maintain their staff. We couldn't afford to do very much in that line because of the shortage of such goods, but he did not believe it would affect the volume of visitors coming to this country. Visitors could not expect to get super-luxury conditions in this country, or indeed in Europe, during the next year or two.



The Union Pacific system, showing location of Pocatello near the junction of the Seattle and Los Angeles main lines

Union Pacific Hump Yard at Pocatello



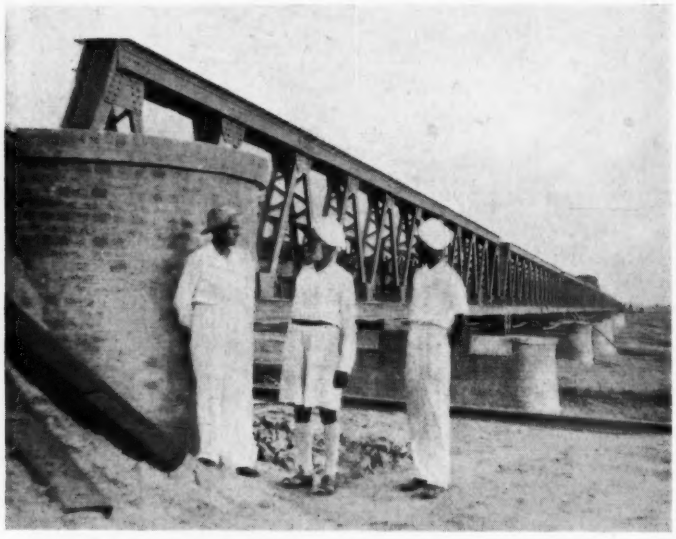
General view of the sidings at the foot of the hump. Two of the three control towers from which the retarders and points are operated are seen on the left and right of the picture

Wagons running down the hump. The first three retarders (two of which are seen in foreground) and the first three sets of points are operated from the control tower on the left. At the top of the hump is the retarder yardmaster's tower

A New Indian Railway Bridge

Crossing a tributary of the Sutlej River

By Marshall W. Baldwin



The Sirsa Bridge on completion of girder erection

AT the end of the recent war the Punjab Government made an active beginning on the construction of a dam across the Sutlej River near a village called Bhakra, at a point where the river breaks through the foothills of the Himalayan Range before following its course over the Punjab Plain to its confluence with the Indus. The dam, which will be 500 ft. high, will store 4·24 million ft.-acres of water, and will make possible the generation of 188,000 kW. of electric power.

To allow the estimated 400,000 tons of construction material to be carried to the dam site, the North Western Railway, at the instance of the Punjab Government, in 1946 began the extension of the Sirhind-Rupar branch line from the then existing railhead of Rupar to a terminus at Nangal. The terminus was chosen as being a point suitable for further extension west of the Sutlej to connect with Hoshiarpur, and also as a convenient site for delivery of construction materials for the Bhakra Dam. Since the partition of India, the portion of the N.W.R. concerned has become the Eastern Punjab Railway.

Heavy Bridging Required

The alignment of the extension, which is 34 miles long, runs roughly parallel to the Sutlej River and along the foothills of the Himalayan Range. Throughout its length heavy bridging is required to accommodate the monsoon run-off in the numerous torrents, or *choes*, as they are called locally, which form the cross-drainage to the Sutlej River. The principal watercourse crossed by the railway alignment, the Sirsa Nadi, has a catchment area of 264 square miles, which extends to a point 6,500 ft. above sea level (*i.e.*, 5,600 ft. above the bridge site) in the Kasauli Range, 35 miles in a direct line from the bridge site.

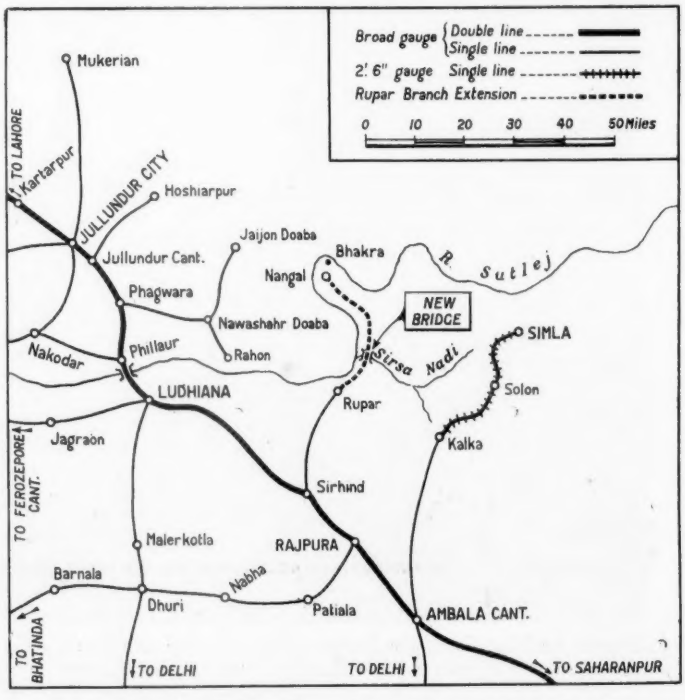
An accurate estimate of the maximum run-off in this torrent could not be made by direct measurement, because at the point of bridging the flood section was 6,600 ft. wide and the bed was unstable. On consideration of all applicable empirical formulæ, and such gaugings of tributary torrents as were available, the maximum discharge of the torrent was fixed at 120,000 cu. ft. per sec., and the bridge foundations, waterway, and training works were designed on this basis. A further useful check on the maximum run-off was afforded by the waterway of a road bridge, consisting of 42. 20-ft. 6-in. span stone arches, which crosses the Sirsa Nadi several miles upstream of the railway alignment, where the catchment area is 63 per cent. of the catchment area at the railway crossing.

The railway bridge was sited at the centre of the 6,600-ft. flood section, or *kadir*, on what was an island flooded only at intervals of several years during the heaviest floods. The site of the bridge, though hydraulically correct and convenient for construction in that it was dry, necessitated very extensive temporary and permanent river training works to converge the dry-weather channels on the bridge site. The guide banks were armoured with stone boulders, and the aprons consisted of three rows of concrete blocks, 6-ft. cube, at the toe of the bank slope, against which an orthodox boulder apron, 15 ft. wide, was laid.

Development of Channel

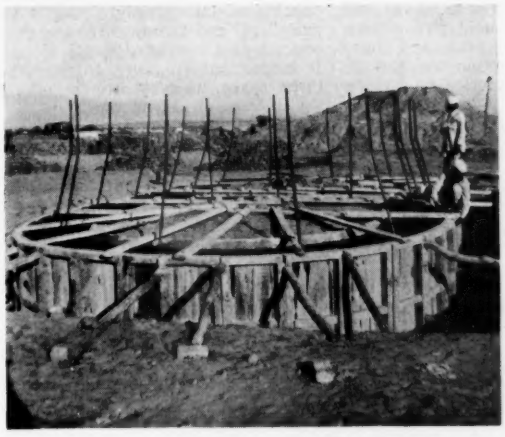
To develop a deep channel during the earlier floods of the monsoon, earth diversion bunds were constructed diagonally between the upstream mole heads of the guide banks and the extremities of the flood section of the river. These earth bunds served their purpose, and finally breached during a flood of 40,000 cu. ft. per sec. within 14 days of the commencement of the monsoon. As an additional precaution, the upstream slopes of the railway embankment in the *kadir* of the river were covered with an armour of shingle up to 4 ft. above high flood level to avoid damage by wave action in the ponded water.

In conformity with usual Indian engineering practice, well foundations were used. The wells were of double-D shape, 36 ft. long by 19 ft. wide, having a steining thickness of 5 ft. 3 in. and cross walls 6 ft. thick. As a result of trial borings, the bottoms of the wells were fixed at 62 ft. below high flood level, but, coarser strata being discovered during sinking, the depths of the wells were reduced by 10 to 15 ft.

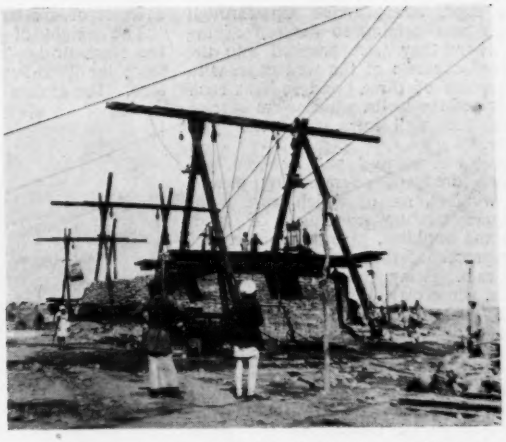


Eastern Punjab Railway lines in the vicinity of the new bridge

A New Indian Railway Bridge

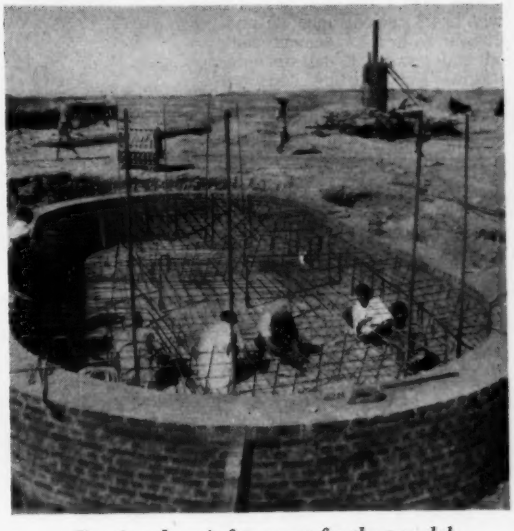


Reinforcement and shuttering of well curbs



General view of bridge site during sinking

Casting the bottom plug with self-opening skips



Erecting the reinforcement for the top slab

The seventh span, showing the channel developed during the monsoon

The cutting edges of the walls were made up of 7-in. × ⅜-in. mild-steel plates welded to the flanges of 60-lb. flat-footed rails. Above the cutting edges, reinforced concrete curbs, 5 ft. deep, were cast. Mild steel bond rods, 1¼ in. dia., bolted to the cutting edge, were carried up through the curb and steining to the top of the wells, where they were cranked into the reinforced concrete of the well caps, with the exception of three bond rods at each extremity of the wells, which were carried through the well caps into the pier masonry.

Sinking was carried out by ¾-cu. yd. Priestman dredgers, operated by steam-driven winches, six of which were used. The upper stratum, consisting of sand, shingle and boulders, gave no trouble, and sinking proceeded through this at a satisfactory rate. Below the sand, shingle and boulders, dense clay was encountered, and between the two strata a layer of conglomerate, up to 2 ft. thick, was found in several of the wells. The conglomerate and clay gave considerable trouble, and pneumatic drills operated by divers, and gelignite exploded electrically in the well sumps, had to be used. All the wells were sunk without any appreciable tilt.

Sinking was begun in November, 1946, and continued night and day until completion in June, 1947. The well sumps were sealed with 1:4:8 cement concrete and the wells plugged with 1:2:4 cement concrete deposited under water in self-opening enclosed skips. The hearting consisted of river sand, and the top plug was surmounted by a heavily reinforced concrete slab, 3 ft. thick, distributing the pier load over the well steining.

Due to difficulties connected with the fabrication of new girders in India, old girders previously released during re-girdering programmes of the North Western Railway were used. Seven of these spans had been released from the Nari Bridge (see *The Railway Gazette* of July 19, 1946), and are wrought-iron pony trusses supplied by P. & W. Maclellan Limited, Glasgow, in 1886. These were strengthened some 30 years ago by the addition of steel sections to the chords, a second system of web members, and the doubling of the number of cross-girders.

The remaining three spans were released during the dismantling of the line between Khost and Khanai on the Sind-Peshin section of the North Western Railway, and, apart from not having been strengthened, are similar to the spans released from the Nari Bridge. All ten girders were used without modification, with the exception that new mild-steel stringers were fitted in place of the old wrought-iron stringers, which were condemned on account of excessive corrosion.

The weight of each main girder from the Nari Bridge was 40 tons, and those from the Sind-Peshin section weighed 26 tons. The girders were erected by jacking from the river bed during the dry months preceding the monsoon. To facilitate this work a construction line was built on the river bed, parallel to and about 40 ft. downstream of the bridge centre line. The girders, in three sections, were trained out to the bridge site, unloaded opposite the spans for which they were intended, assembled, riveted, and lifted on sleeper cribs, being finally slewed on to the piers on steel rollers. A 500-cu. ft. per min. diesel-driven compressor was used for riveting and other miscellaneous operations on the steelwork.

On account of the three unstrengthened spans, the bridge, on completion, was capable of taking only Group 4 (16½-ton axle load) and Group 5 (13-ton axle load) engines at a restricted speed of 20 m.p.h. It is intended, however, to strengthen the three spans, thereby bringing the bridge up to full B.L. Standard, capable of carrying Group 3 engines (17-ton axle load).

The contractor for the substructure was the Hindustan Construction Company, and the superstructure was erected by departmental staff of the North Western Railway. The bridge was made fit to carry traffic by the end of June, 1947, 7½ months after beginning the work.

Assembly of girders

L.M.S.R. 2-6-2 Tank Engines for Secondary Services

(*Concluded from page* 105)

with no unusual features. The top-feed clack boxes may be mentioned, as they now exhibit clacks and seatings combined with the coverplate casting, so that only one joint is needed for each delivery pipe. Sloping plates convey the incoming water to the curved interior surfaces of the barrel (so as to avoid the tubes), and thus displace the familiar perforated trays. The dome is a modern representative of the very convenient type which was in favour for so long on the Caledonian Railway; the removal of almost the entire dome can be effected quite easily due to the low level of the flanged point. Repairs to the regulator are thus greatly facilitated.

The standard features of L.M.S.R. design which were inspired by the arrival of American locomotives in this country during the war, namely, rocking grates, hopper ashpans, and self-cleaning smoke-boxes, all figure in these tank engines. These details, however, have received a good deal of notice already, on their own account, as very welcome improvements.

The tanks hold 1,350 gallons and are kept clear of the boiler, so that it can be lifted out of the frames without requiring the tanks to be removed.

G.W.R. Ambulance Work.—Ambulance work on the Great Western Railway was steadily maintained during the past session, and there was an increase in recruiting. During the session 5,048 members of the staff passed first-aid examinations under the St. John Ambulance Association, and 329 of that number were recruits. The Athlone Bowl, awarded to the division gaining the highest percentage of new members in proportion to the total number of staff was, for the second year in succession, won by Bristol "B" Division; the runner-up was Plymouth Division. Many reports of exceptionally efficient first aid rendered by members of the staff were received, and awards included one gold medal, one silver medal and one bronze medal. A total of 266 members qualified for long service efficiency awards.

First Railway Opened by Albania.—A standard-gauge single-track line connecting Durazzo with Pekinj (26 miles south-east of Durazzo) was opened on November 7 last year. The line continues for 1¾ miles beyond Pekinj, as it is the intention to extend it to Elbasan, and ultimately to build eastwards from Elbasan, across the Jugoslav frontier, to Struga. From Struga there is a narrow-gauge line to Skopje, which is scheduled for conversion to standard gauge. Apart from light railways built for military purposes, this is the first railway to be opened in Albania, although for a short time during the war some portions of the Jugoslav system came within what was then known as "Greater Albania." It also was reported in 1942 (see our August 7, 1942, issue) that a standard-gauge line had been built from Durazzo to Tirana and Elbasan.

RAILWAY NEWS SECTION

PERSONAL

Mr. F. C. Sturrock, Minister of Transport, South Africa, has been appointed Minister of Finance. Mr. S. F. Waterson, hitherto Minister of Economic Development, and at one time High Commissioner for the Union in London, has succeeded him as Minister of Transport.

Sir Eric Gore Browne (lately Chairman, Southern Railway Company) has been appointed a Director of the Rio Tinto Co. Ltd.

Mr. C. K. F. Hague (Managing Director of Babcock & Wilcox Limited) has been elected President of the British Engineers' Association.

The late Major H. E. Hickmott, sometime Managing Director of Ribble Motor Services Limited, left £52,534.

Sir John Anderson, who resigned from the board of Imperial Chemical Industries Limited in 1938 to take up a Cabinet appointment, has been reappointed a Director of the company.

Mr. C. Holt has been appointed Assistant General Manager (Administration), Mr. H. H. Gardiner, Assistant General Manager (Negotiations), and Mr. Cecil Garstang, Assistant General Manager (Traffic), of Thos. Cook & Son Ltd.

Mr. M. Moore has been appointed a Director of Jonas Woodhead & Sons Ltd.

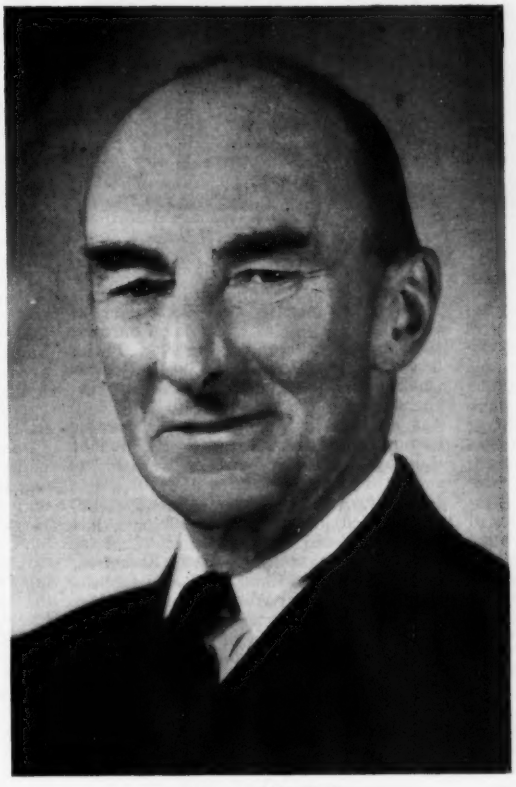
The late Mr. E. H. Dwane, at one time Chief Accountant & Auditor, Nizam's Guaranteed State Railway, left £44,480.

Mr. P. W. Dobson has been appointed Chief Mechanical Engineer of the Buenos Ayres Great Southern and Buenos Ayres Western Railways, Mr. F. C. Egerton has been appointed Traffic Manager.

Mr. T. C. S. Haslam, Assistant General Manager, Buenos Ayres & Pacific Railway, retired on December 31, and Mr. C. E. Grier, General Manager's Representative in Mendoza, has been appointed Assistant General Manager; Mr. J. G. Dodds has been made General Manager's Representative in Mendoza. Mr. T. Pride, Stores Superintendent, B.A.P.R., has retired, and has been succeeded by Mr. Adin Hull. Mr. T. C. Woods has been appointed Deputy Chief Engineer.

Mr. W. Lionel Fraser (Deputy Chairman of Helbert, Wagg & Co. Ltd. and a Director of other companies) has been elected a Director of Tube Investments Limited and appointed Deputy-Chairman. Sir Edmund Crane, who is shortly leaving for South Africa, has resigned from the board of Tube Investments, which he joined in November, 1946, when Tube Investments acquired the Hercules Cycle & Motor Co. Ltd.

Mr. C. M. Cock, M.I.E.E., M.I.Loco.E., who, as recorded in our January 9 issue, has been appointed Chief Electrical Engineer to the Railway Executive, has hitherto been Chief Electrical Engineer, Southern Railway. He was born in Melbourne, and received his engineering training at the Newport locomotive workshops of the Victorian Government Railways. On the outbreak of war in 1914 he served as a midshipman with the combined naval and military expedition which in September of that year landed in German New Guinea, and subsequently served afloat in the Pacific and in the North Sea. He became Engineer Lieutenant, R.N., in January, 1919, and left the service towards the end of that year, when he joined the staff of Merz & McLellan, consulting engineers. While with that firm, Mr. Cock acted as Personal Assistant to the late Mr. E. P. Grove, Chief Resident Engineer on the electrification of the Melbourne suburban lines of the Victorian Government Railways and the construction of Newport "B" Power Station for the Victorian Electricity Commission. On completion of those works in 1924 Mr. Cock proceeded to India as one of the supervising engineers of Merz & McLellan on the electrification of the G.I.P.R. suburban lines, and the B.B.C.I.R. suburban lines, and the main lines of the G.I.P.R. to Poona and Igatpuri. In 1929, when the electrification was completed, Mr. Cock joined the G.I.P.R., and held appointments as Distribution Engineer and Rolling Stock Engineer before being appointed Traction Superintendent and subsequently Divisional Superintendent for the area including Bombay. In addition to his railway duties, in 1940 Mr. Cock organised the Bombay Harbour Motor Boat Patrol, manned principally by local yachtsmen, and was in command until his full-time services were loaned to the Royal Indian Navy; but while he was serving afloat as Lt.-Commander, R.I.N.V.R., it became necessary, on account of the increasing pressure on Indian railways, to recall him to railway duties early in 1942. Mr. Cock joined the Southern Railway in January, 1945, and was appointed Chief Electrical Engineer to the company in the following May. He is a Member of Council of the Institution of Electrical Engineers and of the Institution of Locomotive Engineers, and is an Associate Member of the Institution of Engineers (Australia).



Mr. C. M. Cock

Appointed Chief Electrical Engineer to the Railway Executive

Colonel L. Edge and Mr. V. A. B. Hughes have joined the board of the Chloride Electrical Storage Co. Ltd.

Mr. S. A. Lane has joined the board of the Brush Electrical Engineering Co. Ltd. and has been appointed General Manager. Mr. Lane was formerly Managing Director of Tarran Industries Limited, and before that was Director & General Manager of Mirrlees, Bickerton & Day Limited, which is now one of the oil-engine manufacturers in the A.B.O.E. group.

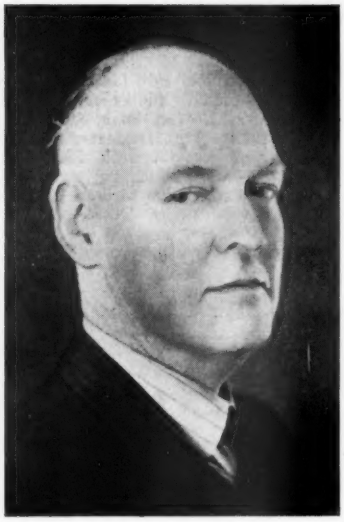
The United Steel Cos. Ltd. announce the following appointments at the Appleby-Frodingham branch:—Lt.-Commander G. W. Wells becomes Joint General Manager with Mr. W. B. Baxter; Mr. A. Robinson becomes Technical Consultant and a member of the Appleby-Frodingham board; Engineer-Rear-Admiral C. W. Lambert becomes General Works Manager, and Messrs. A. Jackson, G. D. Elliot and W. Geary are appointed Works Managers; Mr. K. Paterson takes over Admiral Lambert's duties as Chief Mechanical Engineer, and Mr. J. L. Gaskell is appointed Chief Electrical Engineer.

Mr. R. H. Hacker, who, as recorded in our January 9 issue, has been appointed Chief Officer (Continental) to the Railway Executive, has hitherto been Continental Superintendent, Southern Railway. He was educated at Dover College (of which he is now a Governor). He entered the Goods Manager's Office, S.E.C.R., in 1909, but was transferred to the Continental Traffic Manager's Office in the following year. At the outbreak of war in 1914 he was transferred to the Gare Maritime, Boulogne, in connection with S.E.C.R. work at that port. Subsequently, on receiving a commission in the Army, he served on the Mediterranean Lines of Communication in France and Italy, and was demobilised in 1919 with the rank

Elliott] [& Fry

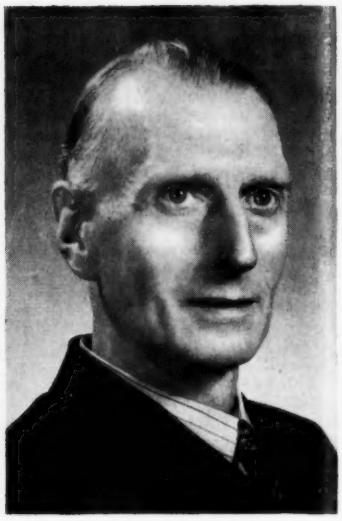
Mr. R. H. Hacker

Appointed Chief Officer (Continental), Railway Executive



Mr. H. Adams Clarke

Appointed Chief Officer (Staff & Establishment), Railway Executive



Mr. F. Weller

Appointed Chief Officer (Administration), Railway Executive

of Captain. After the war Mr. Hacker returned to the Continental Department and attended some of the first International Conferences on the Continent concerning the resumption of through booking arrangements. At the time of the amalgamation in 1923 he was placed in charge of the International Fares & Traffic Section of the Southern Railway Continental Department, and was subsequently promoted to be Head of the Passenger Section of that office. At the beginning of 1937 Mr. Hacker was appointed Chief Clerk of the Continental Department, retaining his charge of the Passenger Section, and in October of that year became Deputy Assistant for Continental Traffic, the post from which he was promoted to be Continental Superintendent in March, 1938. After the close of hostilities in 1945 he was actively engaged in organising the resumption of the international services of the Southern Railway making frequent visits to the Continent in that connection. Mr. Hacker received the decoration of Chevalier de l'Ordre de la Couronne (Belgium) in 1939, and was created Officier de la Legion d'Honneur in 1947. He was Chairman of the Continental Traffic Managers' Committee in 1945 and 1947, and was elected Chairman of the Passenger Committee of the International Union of Railways in 1945.

Mr. H. Adams Clarke, M.Inst.T., who, as recorded in our January 9 issue, has been appointed Chief Officer (Staff & Establishment) to the Railway Executive, has hitherto been Chief Staff & Establishment Officer, Great Western Railway. Mr. Adams Clarke was born in Dublin in 1890, and began his service on the G.W.R. in the Audit Office at Paddington in 1907. In 1909 he was transferred to the Chief Engineer's Office, and was employed there until, in 1914, he was posted to the Divisional Traffic Superintendent's Office at Paddington. In 1917 he was promoted to the Staff Section, General Manager's Office, of which section he became Head in 1921. In 1936 Mr. Adams Clarke was appointed Staff Assistant to the General Manager, and, in 1941, Chief Staff & Establishment Officer. He was Secretary to the company's side of the Sectional Councils and Railway Council set up under the Railways Act, 1921, until 1929, and afterwards was the General Manager's representative on the Sectional Councils. He has been a member of the Railways Staff Conference, Railway Staff National Council, and other negotiating bodies dealing with railway staff; also a member of the council of the British Association for Commercial & Industrial Education. He has been Chairman of the G.W.R. Central Ambulance Committee since 1936 and has taken an active part in the affairs of the G.W.R. Staff Association for a number of years. Mr. Adams Clarke is a member of the National Advisory Council on the Employment of the Disabled; and of the

Mr. A. C. B. Pickford

Appointed Executive Officer (Terminals), Railway Executive

Mr. G. S. Hussey

Appointed Executive Officer (Administrative & Special Duties), Railway Executive

Mr. S. E. Clark

Appointed Secretary, Docks & Inland Waterways Executive

Unlicensed Residential Establishment Wages Board. He is an Officer of the Order of St. John of Jerusalem.

Mr. F. Weller, who, as recorded in our January 9 issue, has been appointed Chief Officer (Administration) to the Railway Executive, was formerly Acting Principal Assistant to the General Manager, Great Western Railway. He entered G.W.R. service in 1908 in the Goods Department at Paddington, and subsequently gained general experience at South Lambeth Goods Station and in the London District Manager's Office. From 1916 to 1919 he served with the R.A.M.C. In 1923 he was transferred to the General Manager's Office, where he had experience of commercial questions affecting the company's railway, dock, and steamboat services, and acted as Secretary of the Suggestions Committee for a period. In 1932 he became first assistant in the General Section, and in 1939 was placed in charge of the section. Since the outbreak of the war in 1939 Mr. Weller has been in charge of the staff retained at Paddington to deal with war emergency arrangements and urgent matters arising from the Government control of railways. During this time he accompanied Sir James Milne to meetings of the General Managers' Conference and has thus had close contact with many major questions of railway policy. In 1942 he was appointed Assistant to the General Manager (Sir James Milne) for Special Duties; and in 1947 Acting Principal Assistant. He is a Brunel medallist of the London School of Economics.

Mr. A. C. B. Pickford, M.Inst.T., who, as recorded in our January 9 issue, has been appointed Executive Officer (Terminals) to the Railway Executive, has hitherto been Assistant to Chief Goods Manager (stationed at Cardiff), Great Western Railway. He began his railway career in Cardiff in 1915. In 1929 he went to the Chief Goods Manager's Staff Department, and from 1930-33 was engaged on outdoor investigations covering general organisation subjects, goods shed working, and bonus arrangements. He was the Goods Department representative on the G.W.R.-L.M.S.R. Closer Working Investigating Committee. In 1933 he became Personal Clerk to the Chief Goods Manager, and in 1934 was appointed Goods Agent, Slough. Early in 1937 he returned to Paddington as Outdoor Representative, Rates Department, and subsequently took charge of the Research Section. Mr. Pickford was appointed Rates Assistant (Research) in 1941, and up to the time of his transfer to Swansea as Assistant District Goods Manager early in 1943 represented the G.W.R. on the Inter-Company Freight Rolling Stock Control and the Railway Liaison Committees with the Ministry of Food and Ministry of Supply. Later in 1943 he was appointed District Goods Manager, Swansea, and in 1945 he went to the corresponding post at Cardiff. He was appointed Assistant to Chief Goods Manager at Cardiff in 1946. He was lent by the G.W.R. last October to the newly-formed Railway Executive to assist in organising the national wagon-clearance drive. Mr. Pickford gained a number of awards under his company's educational facilities, including first place in both Railway Law and Railway Economics at Cardiff Technical College. In 1927 he passed the final examination of the Institute of Transport with a distinction. He is also a gold medallist of the G.W.R. London Lecture & Debating Society.

Mr. G. S. Hussey, M.B.E., M.C., A.M.Inst.T., who, as recorded in our January 9 issue, has been appointed Executive Officer (Administrative & Special Duties) to Mr. R. A. Riddles, the Railway Executive Member for Mechanical & Electrical Engineering, has hitherto been Assistant to Vice-President, L.M.S.R. He was educated at Berkhamsted, and joined the L.N.W.R. in 1907 as junior clerk at Camden Goods. Later that year he became an apprentice in the General Manager's Office, and from 1910-14 was Confidential Clerk to three Assistant Superintendents of the Line. After station experience he became Confidential Clerk to the Superintendent of the Line. In May, 1915, Mr. Hussey, who had previously spent 3½ years in the Officers Training Corps and from 1908-13 in the London Scottish, was gazetted 2nd Lieutenant, Royal Engineers (Signals). He served in France with the Guards Divisional and Brigade Signal Companies, being mentioned in despatches, awarded the Military Cross, and attaining the rank of Captain. On demobilisation, Mr. Hussey became Outdoor Assistant to the Superintendent of the Line at Euston and later at Birmingham, becoming Chief Outdoor Assistant at Crewe in 1922. He returned to Euston in 1924 as Assistant Welfare Superintendent, and in 1927 became a Personal Assistant to the Vice-President, Finance & Services. In 1931 he joined the staff of the Executive Investigation Office, and in 1933 he was appointed Assistant (Job Analysis) to the Chief Officer for Labour & Establishment. In 1936 he became Assistant Outdoor Superintendent (New Works) under the Commercial & Operating Managers. During the recent war he was Chairman of the R.E.C. Air Raid Precautions Committee throughout its existence, and was also Colonel Commander of the L.M.S.R. Home Guard. He was awarded the M.B.E. in June, 1941.

Mr. S. E. Clark, who, as recorded in our January 16 issue, has been appointed Secretary to the Docks & Inland Waterways Executive, started his career on the South Eastern & Chatham Railway. After experience in various departments he entered the Secretary's Office, remaining in that office after the formation of the Southern Railway and passing through all sections of the department. During the recent war he was appointed Acting Secretary of the Southern Railway, and, on the return from national service of the Secretary, became Deputy Secretary. Early in 1947 he went to Southampton as Assistant Docks & Marine Manager. Mr. Clark has taken a wide interest in all branches of transport activities and holds the London School of Economics Brunel Medal ("special distinction" in Law of Carriage, and Operating Economics). He has formed, or assisted in the management of, numerous railway clubs and societies.

We regret to record the death on January 11, in his 80th year, of Mr. Reginald Todd, O.B.E., at one time Deputy Agent of the Bombay, Baroda & Central India Railway.

Mr. I. A. Marriott, who joined the new board of W. G. Bagnall Limited when it was acquired by Heenan & Froude Limited towards the end of last year, has been appointed Managing Director. He is also acting as the representative of the Brush Electrical Engineering Co. Ltd. on the Internal Combustion Group of the Locomotive Manufacturers' Association, of which the Brush company has recently been elected a member. Mr. Marriott, who is also on the board of Associated British Oil Engines Limited, is the son-in-law of the late Mr. James Cadman, Chairman of W. G. Bagnall Limited for many years until its acquisition by Heenan & Froude Limited.

Sir Cyril Hurcomb, Chairman of the British Transport Commission, and other members of the Commission are this week carrying out a visit to Derby, to meet officials of the London Midland Region in the area, and see various aspects of railway work. Their activities are including inspection of the control room of the District Operating Manager, and the School of Transport, and discussion of the work of the area with the principal local railway officials; also visits to the Divisional Operating Manager's Department, Derby Locomotive Works and the Railway Research Laboratory.

Brigadier J. C. B. Wakeford, lately Chief Railway Commissioner, Burma, and since then Technical Adviser on Railways to the Government of Burma, has resigned from the service of that Government. He is leaving that country on February 15 for the United Kingdom, and will take up the appointment of Chief Engineer to the Cameroons Development Corporation.

Mr. W. J. Air, Deputy Railway Commissioner, Burma, who, as recorded in our last week's issue, proceeded on 2 years' leave preparatory to retirement on January 4, expects to arrive in the United Kingdom about the middle of February.

Mr. C. L. G. Fairfield has joined the Mullard Wireless Service Co. Ltd.; the applications of Mullard research and development work to industrial problems will be one of his activities, in which he will act as assistant to the directors in a technical capacity.

Mr. F. Turner is shortly relinquishing his position in the Diesel Traction Department, Vulcan Foundry Limited, to become Technical Sales Manager, Locomotive Department, John Fowler & Co. Ltd., Leeds.

Mr. J. Taylor Thompson, hitherto Engineer (York), L.N.E.R., has been appointed Civil Engineer, North Eastern Region, Railway Executive. He is President-elect of the Permanent Way Institution.

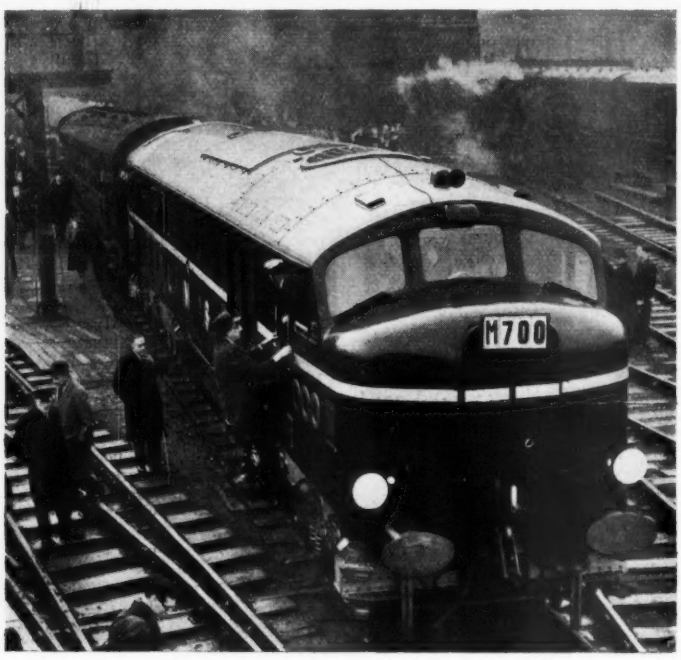
H.E. Abdul Megead Pasha Badr has been appointed General Manager of the Egyptian State Railways, in succession to H.E. Mahmoud Shaker Pasha, retired.

The Council of the British Iron & Steel Federation has re-elected Mr. Ellis Hunter as President for 1948. Sir James Lithgow having expresed a wish to resign from the Past Presidency, Mr. G. H. Latham, President-elect in 1947, has been appointed Past President. Mr. N. H. Rollason becomes President-elect for 1948.

We regret to record the death on January 19, of Mr. Richard Rigby, who was a Director of the Southport & Cheshire Lines Extension Railway. He was Chief Accountant, Great Central Railway, until the grouping, when he retired. He subsequently became Financial Adviser to the Southport & Cheshire Lines Extension board, and some two years ago was appointed a Director.

Trial Runs of Main-Line Diesel-Electric Locomotives

Under normal conditions and drawing a 12-coach train on the London St. Pancras-Manchester route there was improvement on the schedules laid down



Diesel-electric locomotive No. 10000 ready to leave St. Pancras Station drawing a 12-coach train

THE first diesel-electric locomotive built for British main-line service, the single-unit 1,600-h.p. No. 10000 of the London Midland Region, which was described and illustrated in our January 2 issue, underwent dynamometer car trials on the St. Pancras-Manchester main line on January 14 and 15.

For the purposes of these trials, a train was made up of 12 vehicles, including dynamometer car, weighing in all 393 tons tare, this being equivalent to the maximum load laid down to be worked to the same timings by the standard 4-6-0 ("5X") express passenger steam locomotive.

On the first day of the trials, No. 10000 worked the test train from Derby to St. Pancras, with intermediate stops at Leicester and Bedford. On the second day, a run was made from St. Pancras to Manchester Central—including the severely-graded Peak section—with stops at Bedford, Leicester, Derby, and Millers Dale. Finally the test train returned from Manchester to Derby with one intermediate stop at Millers Dale.

No attempt was made to set up any exceptional performance, the object being to adhere as closely as possible to normal service conditions, but the diesel-electric unit maintained the schedules laid down, and, indeed, slightly improved on them.

On the first day's run from Derby to London, the initial 29½ miles from Derby to Leicester were covered exactly in the 35 minutes scheduled, including a permanent way restriction costing about 2 min. From Leicester to Bedford South the 49½ miles were run in 55½ min., start-to-stop, or at an average speed of 53·5 m.p.h., there being a gain of 3½ min. on schedule over this section; the minimum speed at Sharnbrook Summit was 42 m.p.h. Finally, the 49½ miles from Bedford South to St. Pancras were covered in 55 min., including a permanent way slowing at St. Albans, compared with a booked allowance of 58 min.

On the second day's run from St. Pancras to Manchester, the train, although delayed for four minutes by signal checks and permanent way restrictions between St. Pancras and Leicester, arrived at Derby three minutes ahead of schedule.

The severe gradients of 4½ miles between Millers Dale and Peak Forest, including 3 at 1 in 90, were climbed in 8 min. start-to-pass, compared with the booked allowance of 10 min. Arrival at Manchester Central, 61½ miles from Derby, was two minutes early.

First Southern Region Staff Conference

Mr John Elliot, Chief Regional Officer, Southern Region, held the first of a series of regional conferences with all grades of the staff at the Brunswick Institute, London, S.W. on January 14. The object of the meeting was to explain to the men something of the organisation of the Southern Region as it now functions under the Railway Executive and to invite suggestions and opinions from the staff for the improvement of the working and the service to the public.

More than 200 men attended from stations and depots (including head offices) within a radius of 50 miles from London. Many useful suggestions were made and pertinent questions asked to which the Chief Regional Officer gave detailed replies, or arranged for inquiry to be made.

Mr. Elliot was supported by the heads and principal assistants of all departments of the railway, the divisional superintendents of traffic and motive power, and the divisional engineers. He intends to hold similar meetings at other places within the Southern Region in the immediate future, and to establish them as a regular feature of staff relationship within the Region.

Belfast & County Down Purchase Agreement

In pursuance of the policy set out in the White Paper on public transport in Northern Ireland of securing the merger of the principal railway undertakings and that of the Northern Ireland Road Transport Board, agreement has been reached, with the approval of the Government, on a proposal for the purchase of the undertaking of the Belfast & County Down Railway Company by the Board.

The terms of the proposal are acceptable to the directors of the company and are being communicated by them to the stockholders. The Government is satisfied that the proposal is just and reasonable, and accordingly intends, at an early date, to submit for the approval of Parliament the legislation necessary to enable it to be carried out. It is proposed that a more comprehensive measure should be introduced later in the year.

The following is a copy of the company's statement on the matter:—

"Arising out of negotiations which have been conducted under the auspices of the Government to effect the merger indicated in the White Paper on public transport, the directors have agreed to a proposal for the sale of the undertaking of the company to the Northern Ireland Road Transport Board for a sum of £485,989 9s. 5d., payable in cash. This agreement cannot be brought into effect without the consent of Parliament, and the Government has undertaken to promote the necessary legislation.

"Under the constitution of the company there is no power to have any effective consultation with the holders of the company's stocks on this matter before legislation is passed, but it is intended that the Bill which Parliament will be asked to approve should provide procedure whereby the holders of stocks of the several classes may agree on the distribution of the purchase money between them, and that in default of such agreement, it shall be distributed in the following manner:—

"To the persons registered on the day appointed for the transfer of the undertaking as holders of the several stocks, for each £100 (nominal) held:—

	£
Ordinary stock	6 7/16
5 per cent. preference stock	31 7/16
4½ per cent. "A" preference stock ...	53 12/16
4 per cent. preference stock	6½
4 per cent. debenture stock	87 1/16
3 per cent. debenture stock	93⅛
3 per cent. baronial guaranteed stock ...	100

"The directors, in informing the stockholders of the proposal, have reached the conclusion that, in view of the position of the company, the proposal is a fair one."

TIMBER DEVELOPMENT ASSOCIATION MAP SUPPLIES.—Further supplies of the map issued by the Timber Development Association showing world supplies of commercial timber are available. The map may be obtained from the Timber Development Association, 75, Cannon Street, London, E.C.4, price 14s. 6d. in cloth, 10s. cloth backed, and 5s. paper.

Some Aspects of Railway Staff Administration

Successful functioning of negotiating machinery in Great Britain

Mr. S. G. Ward, Assistant Regional Staff Officer, Western Region, read a paper on "Some Aspects of Railway Staff Administration" to the Railway Students' Association (London School of Economics & Political Science) in London on January 14. The chair was taken by Mr. John Benstead, member, British Transport Commission, and a Vice-President of the Association.

Mr. Benstead, introducing Mr. Ward to the meeting, expressed his appreciation of being invited to preside so early in his career on the Commission. This was his first visit to the school since 1920, when he attended lectures organised by the Board of the G.N.R., and he remembered vividly a meeting at which Sir Eric Geddes outlined the arrangements under the 1921 Act.

Today they were faced with a great adventure. All questions of political controversy were now over, and it was their job to make the machine work, and he was sure the Commission could rely on the whole-hearted support of every one in the railway service. He himself had never been other than proud of being a railwayman, and he hoped he was one still.

Mr. Ward's subject was one which could make or mar this great experiment. They had to try and inculcate into the men and women in the service the idea that they should be proud to work in the industry. They had got to recreate, to some extent, the old spirit of the railways, and to bring back pride in the craft in every shape and form. The mere question of wages and salaries did not bring the complete satisfaction of a job well done, and if they could stir up this spirit, which he felt was resting dormant today in many sections, then he believed they would be on the high road to success.

Extent of Railway Industry

Mr. Ward opened his paper with a survey of the extent of the railway industry, which employed some 670,000 persons, and next to coal mining was the biggest individual employer of labour. Its staff was placed in four main divisions, namely, the salaried and supervisory staff; the main body of operating staff commonly called the conciliation grades; the workshop staff; and the various miscellaneous but nevertheless important categories.

In order to protect and advance their interests, the workers generally had organised themselves by forming trade unions, which had been recognised by the railway managements since 1912. The principal unions with which the railways were concerned were the National Union of Railwaymen, with a membership of over 450,000; the Associated Society of Locomotive Engineers & Firemen (74,000); and the Railway Clerks' Association (88,000). The railways were concerned also with the Transport & General Workers' Union in respect of certain grades of workers, and with a large number of craft unions catering for mechanics and artisans among shop staff.

There was one important difference between the N.U.R. and the other unions in that the N.U.R. was an "industrial" union catering for any class of worker employed in the railway industry, whereas the other organisations admitted to membership only men who belonged to the particular section of railway staff or trade for which the union catered. It would be appreciated readily that with more than one organisation claiming to cater for individuals in the same grade or section of staff (maybe at the same station, depot, or works) the life of the staff officer was not made any easier.

There were five stages or levels at which the staff function had to be exercised, namely:—(1) Locally (*i.e.*, at the station, shed or depot); (2) at the divisional or district level; (3) at departmental headquarters; (4) at regional headquarters, and (5) nationally.

Each of these levels had its own importance, but in Mr. Ward's opinion one of the most important was the local level, for it was there that direct contact occurred between the employee and the management.

The functions of staff administration permeated throughout the structure, and could be grouped under three main heads: (1) the personnel or establishment side; (2) the labour relations or conciliation branch; and (3) welfare. In general, most of the many aspects of staff administration which came under (1) were of the purely administrative and (generally) non-controversial type.

The second group, *i.e.*, the labour relations or the conciliation branch, was in a different category. It included the agreement of rates of pay and conditions of service, and the functioning of the various links in the chain of negotiating machinery.

The question of negotiating machinery was of topical interest, having regard to obligations laid on the British Transport Commission by the Transport Act. Under the provisions of the Act it was the duty of the Commission to secure that adequate machinery existed for the following purposes:—

(*a*) The settlement by negotiation of terms and conditions of employment of persons employed by the Commission, with provision for reference to arbitration in default of such settlement;

(*b*) the promotion and encouragement of measures affecting the safety, health and welfare of persons employed by the Commission, and the discussion of other matters of mutual interest to the Commission and such persons, including efficiency in the operation of the Commission's services.

Freedom from Major Disputes

The machinery of negotiation on the British railways had been described as the finest of its kind in the world. Leaving aside the General Strike of 1926, there had been no major railway labour dispute since 1924. The machinery was overhauled thoroughly in 1935, and, subject to certain adjustments made in subsequent reviews, the arrangements then agreed were operative today.

First, at stations, depots, or sheds there were local departmental committees comprising four elected representatives of the staff and four representatives of the management. Where the number of staff employed in any department or group of grades was 50 or more, employee representation on these bodies consisted of 12 elected representatives. Questions on which the sectional councils were unable to reach agreement might be pursued at the next stage in the machinery, between the headquarters of the trade unions and of the railway; and such matters, if not disposed of, might be taken to joint meetings between the railways as a whole and the railway trade unions. At this level discussions also took place on matters of a national character.

The next higher body was the Railway Staff National Council, comprising representatives nominated by the railways and each of the three trade unions, where questions (other than minor issues) as to standard salaries and wages, hours of duty and other standard conditions of service, of any proposal to vary a national agreement which it had not been practicable to resolve, were discussed and, if possible, settled.

Railway Staff National Tribunal

The next and final stage was reference to the Railway Staff National Tribunal on major issues, or, by agreement between the parties, to the Chairman of the tribunal as a single arbitrator on less important questions. The tribunal itself consisted of three independent members, one nominated by the railways, one by the trade unions, and a Chairman appointed by agreement between the parties or, failing agreement, by the Minister of Labour after consultation with the parties.

Where the number was below 50, the staff might appoint one or two spokesmen to represent them. Questions relating to the application of the national agreements did not normally come within the committees' functions, neither was it competent for them to agree on the application of any arrangements which would contravene the provisions of any National Agreement.

The next stage in the machinery comprised the sectional councils, of which there were five, covering different categories of staff.

Under the scheme as agreed in 1935, decisions of the tribunal were not final and binding on the parties, but in the early days of the war it was agreed that decisions of the tribunal should be final and binding, and this still applied.

Withdrawal of Labour

There was an important provision in the Agreement of 1935 about the withdrawal of labour. It provided that in no circumstances should there be any withdrawal of labour or any attempt on the part of employees to hamper the proper working of the railway until any matter in dispute had been submitted through the proper channels to the higher management or, if such matter was within the scope of the machinery of negotiation, until the provisions thereof had been utilised fully.

The arrangements outlined covered the main body of railway staff, *i.e.*, the salaried and operating grades. There were separate schemes of negotiating machinery for other sections of the staff. In the case of workshop staff there was provision for shop and works committees, departmental line committees, for discussion with trade unions at headquarters' level, for reference to a national body known as the Railway Shopmen's National Council and, in the last resort, by mutual agreement to the Industrial Court. Schemes had been adopted also for workshop supervisory staff, electrical generating station and substation staff, railway police, and for professional and technical staff.

Mr. Ward concluded his paper with a discussion of discipline, emphasising the important work that could be done by the trade unions in promoting a fuller sense of individual responsibility among the staff; and with a survey of the part played by welfare work both in duty and off-duty hours.

A vote of thanks to Mr. Ward, and to Mr. Benstead for presiding at the meeting, was moved by Mr. A. E. H. Brown, Assistant Chief Regional Officer, Eastern Region.

Living with Transport*

Passenger amenity requirements surveyed in a paper by Mr. Christian Barman and Mr. M. G. Bennett

A railway journey starts at the moment when a passenger steps from the street pavement across the threshold of the station. The first and last laps of that journey are made on foot. Since both laps take place under the auspices of a transport undertaking, and since a transport undertaking is assumed, to understand the science of movement, the passenger will expect his journeys on foot to be as smooth and easy as his journey by rail.

Transport personnel have earned a reputation for good manners which has stood up well under the strain of the last eight years. It is part of the business of those responsible for general amenities to see that the same high standard of civility is reflected in the whole of the physical environment of transport, for this environment is just as much an extension of immediate personal relationships as the telephone and radio are extensions of direct human speech.

The passenger's first contact with transport is not with the staff but with the station entrance. Station entrances today are apt to be distressingly evasive. Often they are so artfully concealed that passengers have great difficulty in finding them. A strong, simple label for station entrances is badly needed. It may be possible to design a better label than the circle and bar device of the London Transport Executive, but no one has succeeded in doing so as yet. The railways now agree that many more station nameplates are needed on platforms—one plate to a coach length is the accepted standard—and that they should be combined with lighting fittings so that they can be clearly seen at night.

So great is the value of a general atmosphere of good design that the railways have begun to take an active interest not only in the appearance of their own buildings but in that of their neighbours.

Once order has been established through good design, the next thing is to maintain it through good housekeeping. Stations and trains do not keep orderly and shipshape of their own accord, though many people think they do. The great enemy of good order and good housekeeping is divided control. Rolling stock is fortunate in this respect; stations, which are nominally under the charge of the stationmaster, are in fact liable to become dumping grounds for furnishings, equipment, tools and materials from many different departments. The first thing a railway does when it wishes to keep its stations in first-class order is to make a single department responsible for their good appearance.

Order deals with relevant matter and prevents one thing interfering with another; cleanliness keeps out irrelevant matter that interferes with people. Other amenities may be missed; they do not as a rule cause annoyance and resentment by their absence. Cleanliness does.

A high standard of cleanliness requires the right personnel, the right conditions, and the right tools.

Buffets and toilets are a simpler problem than premises and rolling stock generally. If the railways are right in assuming that there exists a public demand for cleanliness in these places, the only question is precisely how much cleanliness the public is willing to pay for. The cost will be relatively high because peak loads must necessarily be provided for. The traffic associated with important trains is so heavy that additional staff will certainly be needed if this practice is to be kept up at all times.

If one bears in mind that our existing railway gauge was originally designed for use with horse-drawn carriages seating two a side, the ease and comfort with which five and even six passengers ride abreast in a modern train seems something like a miracle. Yet there are few subjects over which the railway engineer is taking greater pains today than the improvement of seating. The dimensions and inclinations of seats and backs, their modelling or profiling, the degree of hardness or softness, these and other points are being explored.

Lighting can have a marked psychological effect which should be used to ease the passenger's journey. It would seem that, broadly, brightness and whiteness are invigorating; restraint and off-whiteness are restful.

It may seem obvious to say that warmth and fresh air are important, yet it is doubtful whether it is fully appreciated how important they are. Criticism of the present arrangements, in trains, stations and offices, is all to easy. There are ready explanations for the more glaring deficiencies and the achievements of the ideal is a much more complicated problem than is generally realised. Undoubtedly, however, better conditions would add enormously to the pleasure of travel or work on the railway.

Railways, since their stations were first built, have had many demands made upon them for the better reception of passengers. They have been ready and even eager to meet these demands to the best of their ability. In this gradual multiplication of amenities, the value of space itself as an essential amenity has sometimes been lost sight of. Today, it is generally accepted that the value of all such special facilities depends on a sufficiency of space.

In large stations, ticket offices, waiting rooms, and inquiry offices are grouped together either in the middle of the concourse or around its periphery. Here the waiting room plays a more important part. A well-kept waiting room requires the presence of staff of one kind or another to keep it under continuous observation. Besides, the public appreciates the atmosphere of keen and willing service that is created by seeing the staff at their work.

The subject of food and drink is one on which the public are specially sensitive at this present moment. Some of the bitterest of recent Press criticisms of the railways have been concerned with the inadequacy of catering services in the early morning. The railways, however, have known for some time that these services will require a careful overhaul if they are to regain the popularity they once enjoyed. They would like to raise their station buffets and restaurants to such a standard of excellence that the public generally would be drawn to them as well as the passengers using the station. Certainly good food, scrupulous cleanliness, and attractive presentation would bring an immediate response.

Since the railways were first built, the country's standards of personal cleanliness have undergone something like a revolution. More and more, passengers will want to keep themselves clean and will expect reasonable facilities for doing so.

The modern traveller when passing through a railway station wants to be able to buy newspapers, periodicals, books, postage stamps, cigarettes, tobacco, fruit, flowers, safety pins, aspirins and a number of other odds and ends which he may either use or consume on his journey or take with him to his destination. No provision was made for these things at the time when railway stations were designed and built. Later, when the first bookstalls and kiosks appeared within the precincts, they did not form part of a general plan for giving additional service to the passenger. What happened was that ingenious estate agents arranged for existing commercial firms to come in and ply their trade. Yet all things considered, the result has been highly satisfactory.

The first and best of all entertainments in a modern station is the railway itself. Transport people, like so many other experts, find it very difficult to appreciate the enormous and fascinating interest with which the public regard their work.

Passengers are also entertained at stations by means of pictures, films and miscellaneous exhibitions. The most familiar pictures are those that take the form of posters of landscape and architecture. These posters are of two kinds: the descriptive illustration, and the imaginative work of art. There is room for both kinds of poster in a modern transport undertaking.

Today the few first-class travellers interested in social exclusiveness are of far less importance than a new type which is rapidly taking their place. This new type is the business man or public official who wants to read, write or discuss business matters on the way. The research that is now under consideration is likely to show that he regards his train in a very practical light. It is a place to work in, functional in the same sense as the post office sorting van is functional.

Another type of traveller to whom considerable thought is being given is the mother who makes a long journey with one or more small children.

At this present moment, public criticism of the railways is mainly concerned with two things, punctuality and cleanliness. This paper is not concerned with timekeeping, but it is very much concerned with cleanliness. As an objective for immediate action, it has much to commend it.

But cleanliness where and when? Whenever a commodity is in short supply, a clear choice must be made between dispersal and concentration. Cleanliness is such a commodity. Paint is another. Some engineers use their paint ration to give the highest aggregate of protective effect. They spread their paint thinly over the most vulnerable area, in what they call a "patch coat." Other engineers select important stations, and give the whole of these stations two or three good coats on a surface thoroughly cleaned and prepared. The authors would plead for the boldest application of this second policy in dealing with the restoration of cleanliness. They would advocate the improvement of ten carefully selected amenities by one thousand per cent. rather than the improvement of one thousand amenities by ten per cent. The problem is to demonstrate to public and personnel alike how alive and forward-looking the railways are, how much they are on top of their job. The things that are done must be noticed.

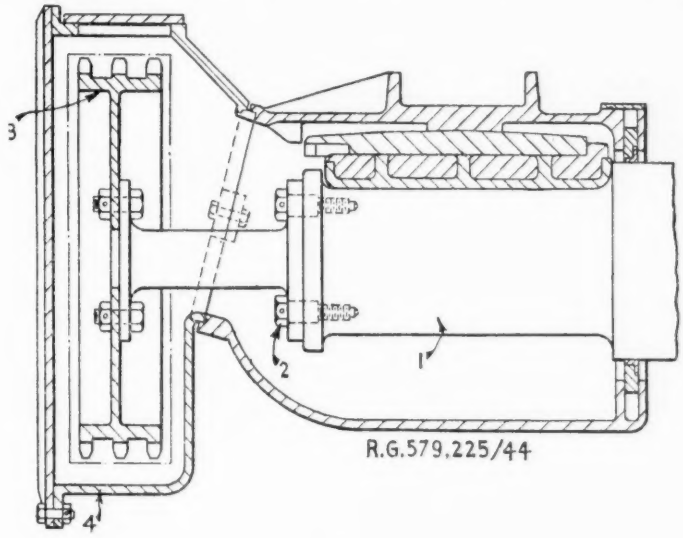
* Abstract of a paper to the Institute of Transport by Mr. Christian Barman and Mr. M. G. Bennett on January 19

ABSTRACTS OF RECENT PATENTS*

No. 579,225. Driving Auxiliary Apparatus

J. Stone & Co. Ltd., of Deptford, and E. C. Hatcher, of "Instow," Woodside Road, Northwood. (*Application date*: *September* 15, 1944).

The invention provides a simple means for obtaining a drive for a dynamo or other device from an axle, which overcomes the disadvantages of a belt drive and which may be fitted readily to an existing assembly. The end of the axle 1 is drilled and tapped for bolts 2, which secure a triple sprocket wheel 3 rigidly to it. A chain casing 4 surrounds this wheel and is secured to the axlebox in place of the usual cover plate, while the chain drives a smaller sprocket running in bearings at the further end of the casing. The spindle of this wheel protrudes through the casing and drives the dynamo, which is fixed to the bogie frame through two fabric flexible joints, to allow for vertical movement of the axle.



No. 576,211. Detachable Pipe Union

S. A. Le Bozec et Gautier, of 28, *Rue Carl Hébert, Courbevoie, France.* (*Convention date*: *March* 15, 1939).

A bayonet type coupling for fuel pipes comprises a tubular member on each pipe, one of which is pressed against an annular sealing washer on the other when the joint is made. At the same time a slide inside one member, by pressing against a similar slide in the other, lifts a fluid-tight valve off its seating in each half of the joint and allows through communication.

No. 579,221. Rail Spikes

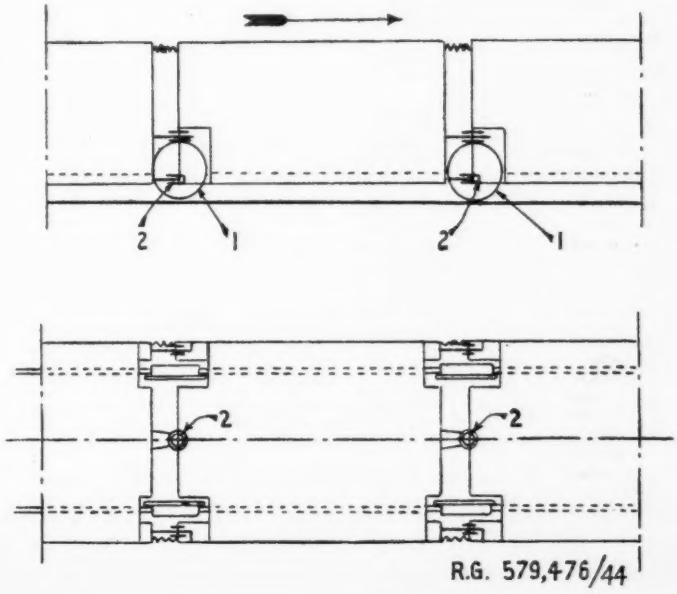
Bernuth Lembeke Co. Inc., of 420, *Lexington Avenue, New York, U.S.A., and B. Kuckuck, of Mt. Vernon, Westchester, New York, U.S.A.* (*Convention date*: *June* 26, 1943).

A rail spike having a straight stem with its upper end in the shape of a crook, so as to apply a downward pressure on the rail, has the cross-section of the crooked part so shaped as to be wider on the underside than at the top. This gives a distribution of metal which is better able to withstand the tensile stress on the under surface, when it is flexed with the extremity exerting a downward thrust on a rail. Preferably, also, the head increases in width and decreases in thickness towards the end which engages the rail.

No. 579,476. Articulated Railway Vehicles

A. Abbey, of 112, *Hatton Garden, London, E.C.1.* (*Application date*: *April* 24, 1944).

Each coach of an articulated unit has two wheels only, 1, at its rear end, and its front end is supported on a pivot 2 carried at the rear of the preceding coach and located on the centre line of the vehicle approximately above its axle. By this method there can be no tendency to lateral oscillation when travelling on the straight; while, on a curve, the angle of incidence of the wheels to the rails overcomes any tendency to derailment by centrifugal force. The coaches are not therefore dependent on their weight for steady running, and a much lighter construction can be adopted.



No. 576,933. Ballast Chip Shovel

J. B. Macaskill, of "Moybeg," Moy, Inverness. (*Application date*: *July* 13, 1944).

A shovel for facilitating the insertion of ballast under sleepers, and for levelling it, comprises a long flat blade turned up at the end, beyond which projects a steel wire loop. The track is raised and the ballast cleared. The shovel is inserted from the end of the sleeper, leaving part of the blade protruding, and chips are thrown forcibly on to the blade. The chips slide along the blade and after striking the upturned end fall into the area enclosed by the wire loop. When the shovel is withdrawn, this loop levels them under the sleepers.

Complete Specifications Accepted

575,562. Rice, C. J. Door fastening.
575,591. Hoy, Austin, & Co. Ltd., and Proctor, S. E. Locking device for nuts.
575,601. Reynolds Tube Co. Ltd., and Reynolds, E. A. Body frame members.
575,629. Hardwick, P. M. Swivelling pipe couplings.
575,645. Westinghouse Brake & Signal Co. Ltd., Kershaw, A. G., and Simmons, A. W. Pressure brake cylinders.
575,716. Hoffmann Manufacturing Co. Ltd., and Newton, B. F. Cages for roller bearings.
575,802. Thompson, A. H. Self-locking nuts.
575,997. Westinghouse Brake & Signal Co. Ltd. Control valve for pressure-operated brakes.
576,063. Shaw, D. Emergency braking of electrically-driven vehicles.
579,105. Blakeborough, R. A., and Klouman, F. A. Method of securing valve seatings in sluice valves.

* These abridgments of recently published specifications are specially compiled for *The Railway Gazette*, by permission of the Controller of His Majesty's Stationery Office. Full specifications can be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, price 1s. each

Notes and News

Draughtsman Required. — A senior draughtsman with railway experience is required for district engineer's office. Limerick. See Official Notices on page 119.

Draughtsman Required.—A draughtsman is required with experience in the preparation of general engineering drawings for reproduction in technical journals. See Official Notices on page 119.

Railway Staff Committees' Changes of Address.—The offices of the Railways Staff Conference, Railway Staff National Council, Special Joint Committee on Machinery of Negotiation for Railway Staff, and Travelling Facilities (Passes, etc.) Committee have from January 19 been transferred from the Central Offices, Euston Station, N.W.1, to Waterloo Station, S.E.1 (telephone: Waterloo 5100, extensions 2745, 2746 and 2747).

Harwich-Antwerp Steamship Service.—On and from Monday, January 26, the British Railways steamship service from Harwich Parkeston Quay will sail on Mondays and Thursdays, instead of on Tuesdays and Fridays. In the reverse direction, the steamers from Antwerp to Parkeston Quay will sail on Wednesdays and Saturdays, instead of on Tuesdays and Fridays. The times will remain as at present, and the connecting rail service will be at the same times as now, but will be from Liverpool Street on Mondays and Thursdays, and from Parkeston Quay on Thursdays and Sundays.

McNamara & Co. Ltd.—The report of the company for the year ended December 31, 1946, shows profits, subject to claims by the Ministry of Transport, of £29,400. The sum of £15,066 is brought in from the preceding year, and the directors have provided £13,800 as reserves for taxation. Out of the balance of £30,666, the directors recommend a dividend for 1946 at the rate of 16⅔ per cent., less income tax, which will absorb £17,179. It is recommended that the residue of £13,487 be carried forward to the credit of profit and loss account. Until August 16, 1946, the company continued under the control of the Ministry of Transport, and up to that date its revenue was derived chiefly from the amount payable by the Ministry under the control contract. Thereafter the company reverted to its normal method of trading.

Silverton Tramway Co. Ltd.—The Acting Chairman of the Silverton Tramway Co. Ltd., Mr. A. J. Hancock, said at the company's annual general meeting that a new agreement with their employees would necessitate the payment of a special allowance of 25s. a week. This was an increase of 11s. a week over the special allowance awarded in 1943. Coupled with an interim basic wage increase of 7s. a week which came into operation last December, and subsequent automatic increases on account of the cost of living, this explained why the result of the year's operations had been affected detrimentally by increased working costs. The company's net profit of £34,117 compared with £37,145 in the preceding year. Working expenses had increased from £80,780 to £89,918. At the present time the lowest wage payable for adult labour in the company's employment was £7 14s. 6d. for a working week of 37½ hr. A 37½-hr. week was almost universal in Broken Hill, and all employees of the mining company received a bonus of up to £8 a week, in addition to their basic wage. It would be appreciated that the difficulties of the management in competing for labour were great.

Broom & Wade Limited.—A final dividend of 15 per cent. declared for the year ended September 30, 1947, maintains the total distribution at 22½ per cent. for the eleventh successive year. The company's net profit of £320,460, before taxation, compares with £199,903 in 1945-46.

Sale of Bermuda Railway.—A Reuters report from Bermuda dated January 13 states that the installations of the Bermuda Railway have been sold by the Government for £115,000 to the Washington firm of R. & T. Electronics Limited. It is understood that the material will be sent to South America for use there. A beginning has been made already with dismantling the line, as reported in our issue of January 9.

Ferry Services on Lake Constance Resumed.—After a break of nearly eleven years, the Swiss Federal Railways resumed their ferry service across Lake Constance, between Romanshorn and Friedrichshafen, on January 5. The service is for conveyance of goods and livestock only until further notice. The purpose of the resumption was, in the main, to shorten communications between Switzerland and the Russian-occupied zone in Germany. This will save time in the turn-round of wagons, a factor of major importance to the Swiss, since, contrary to the provisions of a Swiss-Russian agreement, the Russian authorities are not now supplying their half-share of the rolling stock of goods trains.

Railway Fares and Facilities.—Sir Cyril Hurcomb, Chairman of the British Transport Commission, said in Edinburgh on January 14 that if there was to be an increase in rail fares it would not be an immediate one. Visiting Glasgow on the second day of his two-day visit to Scotland, Sir Cyril Hurcomb said it was unlikely there would be any further railway construction for some considerable time. The best way of serving outlying places was by running the railways in conjunction with road transport and providing a properly integrated transport service. There would be no change in the management or organisation of the Clyde steamer services, or in those provided by David MacBrayne Limited. The nationalised railways had a 50 per cent. share in the MacBrayne company, and he thought that was quite enough for the present.

Uruguay Northern Railway Co. Ltd.—The report of the Uruguay Northern Railway Co. Ltd. for the year ended June 30 last shows net receipts of £1,523, a decrease of £1,404. Gross receipts fell by 15 per cent., from £20,641 to £17,565, on account of a failure of cereal crops and competition from lorries. A decline of 38 per cent. in goods traffic receipts was offset to some extent by passenger earnings of £6,813, as against £4,362 in the preceding year. This item was swollen by exceptional receipts from special trains run in connection with a meeting at Artigas between the late President of Uruguay and the President of Brazil. Working expenses for the year, at £16,042, showed a decrease of £1,672, and represented 91·33 per cent. of the total income. The net revenue account for the year shows a deficit of £392, which, added to that brought forward, increases the accumulated debit balance to £31,638. In a statement issued with the report, the Chairman, Brig. General F. D. Hammond, says that in face of the decline in gross receipts, every measure was taken to curtail expenditure to the lowest limit consonant with maintaining the track and equipment in a condition to deal with the volume of traffic passing over the railway. Certain expenses of a non-recurring nature were involved, however, by transferring the administration of the railway from Paysandu to Montevideo, where the system is now managed under the ægis of the Central Uruguay Railway. Greater efficiency and better co-ordination have resulted from this move.

Association of Scientific Workers.—We have received from the Association of Scientific Workers, 15, Half Moon Street, Piccadilly, London, W.1, a copy of its recently published Charter for Technical Staff in the Engineering and Metallurgical Industries, which represents the commencement of a serious effort to introduce order into the salary structure for professional engineers and metallurgists in those industries in which such matters in the past have been treated in a somewhat haphazard manner. Copies of the Charter are available on application to the Association at the above address.

The Mid Kent Line, Southern Region.—At the meeting of the Railway Club held on January 15, Mr. Charles F. Klapper described the history and train services of the Mid Kent line of the Southern Region in great detail. The title is inappropriate for a railway serving the south-eastern suburbs of London, and affording an alternative route to Croydon, but the promoters visualised an extension through Kent, to shorten the then route from London to Dover *via* Redhill. Several other extensions, none of which was undertaken, were proposed, and the line was associated closely with the alternative routes from London to Brighton projected in 1865 and 1873. In his review of the train services, Mr. Klapper emphasised the extraordinary increase in the passenger traffic, particularly on the Hayes branch, that had followed the electrification of the line, and put forward some suggestions for improving the services and minimising the serious overcrowding of the trains.

Dorman Long & Co. Ltd.—Net profit for the year ended September 30, 1947, amounted to £838,763, comparing with £595,013 in the preceding year. A dividend of 6½ per cent. on the non-cumulative first preference shares has taken £102,172, and £500,000 has been placed to general reserve. Adding the balance of £93,228 brought in, the sum of £329,819 is available for distribution, and the following dividends are proposed: 8 per cent. on the non-cumulative second preference shares; 16 per cent. on the preferred ordinary shares; and 8 per cent. on the ordinary shares. The balance to be carried forward is £329,819. Work on the company's development schemes has continued, and the amount of capital expenditure during the year on land, buildings, plant, and machinery rose to £1,104,296. The allocation of £4,030,731 for depreciation compares with £3,480,731 in the preceding year and has been increased to cover not only annual allowances on the additional plant and buildings, but also the relevant initial allowances under the Income Tax Act, 1945. The value of stocks on hand at the collieries formerly owned by the company in Durham and Yorkshire is recoverable in cash from the

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

REQUIRED for District Engineer's Office, Limerick, Senior Draughtsman with railway experience. Salary scale £400 by £20 to £500 per annum. Applicants may be required to attend in Dublin for interview. The selected candidate will be required to pass a medical examination and to join the Company's Superannuation Fund. Apply to CHIEF ENGINEER, CORAS IOMPAIR EIREANN, Westland Row, Dublin, before February 6, 1948.

DRAUGHTSMAN required with experience in the preparation of general engineering drawings for reproduction in technical journals. Good lettering essential. Write stating age, experience, and salary required.—Box 242, c/o *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

RE D. G. Hall & Co. Ltd., in Compulsory Liquidation. Under instructions from R. W. Meacock, Esq., F.C.A., of Carlton Chambers, Newport, Receiver and Manager for the Debenture Holders, Thomas Parry & Son, F.A.I., acting in conjunction with Stephenson & Alexander, F.A.I., will offer for Sale by Auction as a going concern, at the King's Head Hotel, Newport, on Wednesday, March 24, 1948, at 3.30 in the afternoon (unless previously disposed of by private treaty), the important Freehold Wagon Repairing and Engineering Works known as Imperial Works, Coverack Road, Newport, Mon., containing a total area of approximately 3½ acres, with well maintained and conveniently planned buildings, having a total floor area of about 49,000 sq. ft., together with the extremely valuable Plant and Machinery, Fixtures and Fittings, Office Furniture and Effects, etc. Particulars of Sale, with Inventories, etc., available from February 1, 1948, from the Auctioneers, 22, Stow Hill, Newport, or 5, High Street, Cardiff.

DRAUGHTSMAN, with knowledge of Rolling Stock, required for firm in North Midlands.—Reply to Box 245, c/o *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

REQUIRED to work in London. Civil Engineering Technical Assistants (Senior and Junior), experienced in design and able to undertake surveys and the preparation of detailed working drawings, calculations, estimates and specifications. Engagement on a temporary basis at a salary of up to £12 per week, according to qualifications and experience. Applications, stating age, experience, etc., with copies of recent testimonials, to Box 232, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

TRAINED as a Traffic Apprentice on British Railways, and with 20 years of commercial and operating experience behind him, advertiser under 40 years of age offers his services as Traffic Manager, or similar post, to any large firm in U.K. or Colonies.—Write Box 241, *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

THE FIRST PASSENGER RAILWAY. By Charles E. Lee. A history of the Swansea & Mumbles Railway, which extends over 136 years. Cloth. 8¼ in. by 5½ in. 91 pp. Illustrated. 5*s*. *By post* 5*s* 3*d*.

Ministry of Fuel & Power, and has been included in the balance sheet under the heading of sundry debtors, this item standing at £3,412,120, as against £3,090,706.

Draughtsman Required.—A draughtsman, with knowledge of rolling stock, is required for a firm in the North Midlands. See Official Notices above.

Docks & Inland Waterways Executive Headquarters.—The British Transport Commission announces that, as from January 19, the headquarters of the Docks & Inland Waterways Executive are at 22, Dorset Square, Marylebone, N.W.1 (telephone: Paddington 1831).

Precast Concrete Sleeper Output.—The growing demand for the specialised precast concrete made by Dow-Mac (Products) Limited at Tallington will call for a still further increase in plant capacity in 1948 and its research department has introduced new methods in the manufacturing process which will assist towards the necessary increase in output. The demand for the Dow-Mac prestressed concrete sleeper, specified by the British railways for their reconstruction programme, has placed a heavy demand on output at the Tallington works and has resulted in plans being drawn up for other factories in various parts of Great Britain. This type of sleeper has been used in main-line tracks with train speeds as high as 90 m.p.h. and numbers have been shipped to many overseas countries.

Channel Tunnel Discussions Reopened.—British and French parliamentary delegations have met recently to discuss a project for a Channel tunnel. Estimates of the probable capital outlay, which would be shared by the two governments, vary between £40 million and £100 million. Britain was represented at the meeting by Mr. Christopher Shawcross and Capt. Malcolm Bullock, and France by M. Raoul Dautry, formerly French Minister for Reconstruction, and a former Director General of the French State Railways. Details are to be considered by an Anglo-French committee, comprising representatives of both upper and lower Houses, which is to meet in London shortly. Proposals reported include the driving of a pilot tunnel between Dover and Calais, making use of the 1½ miles sunk last century. This first stage would take about five years and cost approximately £10 million. If successful, two railway tunnels with electrified track, 17 ft. in diameter, and 150-200 ft. beneath the Channel bed, would follow. This would cost at least another £50 million, without allowing for the cost of special defence measures.

Eastern and N.E. Regions Press Relations Office.—The Press Relations Office of the Eastern and North-Eastern Regions, Railway Executive (formerly the Press Relations Office of the L.N.E.R.), has been moved from Dorset Square, London, N.W.1, to 11, Blandford Square, London, N.W.1 (telephone: Paddington 3400, extensions 35 and 36).

National Omnibus & Transport Co. Ltd.—The accounts of this company, which is controlled by Thomas Tilling Limited, show a net profit of £158,136, as compared with £93,160 in the previous year. A dividend of 8 per cent., free of tax, is being paid on the ordinary shares, compared with 6½ per cent. last year, and £50,000, as against £5,000, is being transferred to general reserve. The carry-forward of £24,771 compares with £26,260 brought in.

Completion of Northern Transandine Route.—The new Argentina-Chile Transandine link from Salta into Chile was completed by the laying of the last rail on January 17. As reported in *The Railway Gazette* of November 14, 1947, it is hoped to open the railway, which will provide through communication from Salta to Antofagasta, on February 20, 1948, in the presence of the Presidents of both nations. The location of the line was shown in a map published in our November 14 issue.

Strike Called on U.S. Railways.—Leaders of three U.S. railway unions—the Brotherhood of Locomotive Firemen & Engine Men, the Brotherhood of Locomotive Engineers, and the Switchmen's Union—decided on January 16 to order a strike beginning on February 6, after efforts to mediate in their dispute with the railway companies had failed. Under the Railway Labour Act, President Truman is enabled to appoint a fact-finding board, which would be given 30 days in which to hold hearings. It is expected that the next step will be the appointment of such a board, consisting of three members, to which the unions could present their case.

Argentine Rail Take-Over Forecast.—According to Reuters, the Buenos Aires evening newspaper, *La Epoca*, stated on January 15 that it had "absolute confirmation" that the Argentine Government would "take possession" of the British-owned railways in the country on February 24. The newspaper is owned by a deputy supporting General Peron, President of Argentina, and has proved sometimes to have close contacts with the Government. Asked about the report, Sir Clive Baillieu, leader of the British Trade Delegation to Argentina, said he knew nothing, but if true "it would be most gratifying."

Record Traffic at Southampton Docks.—A total of 577,000 passengers passed through Southampton Docks during 1947. This constitutes a record for the docks and is 51 per cent. higher than the 1946 figures. Cargo imports and exports were 54 per cent. higher and the volume of shipping entering the docks totalled 12,600,000 gross tons.

Discussions on Staggered Holidays.—Means to discourage holidaymakers from travelling on Saturdays and during July and August are being discussed by the British Transport Commission and the British Tourist & Holidays Board. Employers, hotel keepers and other interested parties are being consulted. Suggestions to be put before a conference of the two organisations include a reduction in rail fares for travellers outside the peak period of July and August; and an alteration of the Bank Holiday date from August to September.

Glyn, Mills & Co.—The statement of assets and liabilities as at December 31, 1947, shows an increase from £7,000,000 to £9,000,000 in treasury deposit receipts, the bank now holding liquid assets to the extent of 46 per cent. An increase from £850,000 to £1,060,000 has been made in the reserve fund. Deposits stand at £63,923,027, comparing with £63,936,135. Advances to customers, at £14,560,831, compare with £11,296,601 a year ago, and investments amount to £21,589,637, as against £22,280,142. The total assets are £71,760,507, an increase of £350,504. Other assets include £5,099,918 (£5,335,799) in coin, bank notes, and balance at Bank of England; £3,794,585 (£4,018,230) balances with, and cheques in course of collection on, other banks in the British Isles; £10,026,000 (£13,781,000) money at call and at short notice; and £1,199,068 (£1,412,113) bills discounted. Amounts due by subsidiary companies stand at £53,365, comparing with £35,382 a year ago.

Midland Bank Limited.—After appropriation to contingency accounts, out of which full provision has been made for all bad and doubtful debts, the net profit for 1947 was £2,002,570, comparing with £1,987,148 in the preceding year. The sum of £775,188 was brought forward, making a total available of £2,777,758, out of which appropriations amounting to £1,316,979 have been made. These consist of £666,979 for an interim dividend paid on July 15 last at

the rate of 8 per cent. actual for the half-year to June 30, 1947; £150,000 to bank premises account; and £500,000 to reserve for future contingencies. Out of the sum of £1,460,779 remaining, the directors recommend a dividend for the half-year to December 31, 1947, at the rate of 8 per cent. actual, and the carrying forward of the balance of £793,800. The total dividend for the year of 16 per cent. remains the same as in 1946.

Forthcoming Meetings

January 26 (*Mon.*).—The Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 5.30 p.m. Discussion on "The British System and Procedure," opened by Mr. C. S. Parsons, B.Sc.

January 27 (*Tues.*).—The Institution of Civil Engineers, Great George Street, Westminster, S.W.1, at 5.30 p.m. "Design, Installation, and Maintenance of Long Welded Rails," by Mr. C. E. Dunton, M.A., M.I.C.E., and Mr. Keith Brimsmead, D.S.O., M.I.C.E., M.I.Mech.E.

January 29 (*Thurs.*).—Southern Region Lecture & Debating Society, The Chapter House, St. Thomas' Street, London Bridge, S.E.1, at 5.45 p.m. Exhibition of films by Southern Region Film Unit, with accompanying talk by Mr. Masterton, Chief of Film & Photographic Section, Advertising Department.

February 2 (*Mon.*).—The Institute of Transport, Metropolitan Section, Livingstone House, Broadway, S.W., at 5.30 p.m. for 6 p.m. "Some Cargo Problems of Carriage by Sea," by Mr. C. H. Minett, A.M.Inst.T.

Railway Stock Market

Attributed to the reassembly of Parliament and talk that the next Budget may contain capital levy proposals, stock markets have been uncertain, with leading industrials moderately lower although little selling was reported. Apart from further declines in undated stocks, British Funds were firm, and short-dated stocks recorded small gains. British Transport 3 per cents. (1978-88) were again active and showed firmness at 98 7/16. There was a good deal of selling, but this was counterbalanced by buying. Nevertheless, selling so far has been on a considerably smaller scale than had been expected in some quarters of the market. Moreover, it is being assumed that before British Electricity stock is issued in exchange for shares of electricity supply companies, probably in April, British Transport stock may very well have reached par. British Transport stock (1967-72) has been firm at 99½. In other directions L.M.S.R. Conversion Trust 4 per cent. preference changed hands at close on 18, and the 5 per cent. preferred at 16½. Metropolitan Assented was dealt in around 58½, and Central London (new guaranteed) at 96½.

Following a further burst of strength, shares of road transport companies attracted profit-taking, although they remained active. It is generally assumed, however, that having regard to earning capacity and the present-day value of assets, shares of most road transport concerns probably are valued moderately at current prices. B.E.T. deferred stock has continued to fluctuate sharply, being down to £1,670 at one time before rallying to £1,700. At the close of last week the price touched £1,800 at one time or £20 below the record level reached in 1932, when valuable capital bonuses were paid. Tillings came back to 91s. 3d., Scottish Traction to 82s. 6d., and Lancashire Transport to 68s.

Canadian Pacifics reflected the increased activity in dollar stocks, but eased to 18½; the preference stock was 75 and the 4 per cent. debentures 111½. There was again considerable interest in Beira Railway bearer shares, which advanced further to 57s. 3d. Elsewhere, White Pass Yukon 6 per cent. debentures have changed hands around 29¼, and Algoma Central 5 per cent. first debentures at 93. In other directions, Barsi Light Railway marked 105.

Renewed reports that signing of the Anglo-Argentine trade pact is imminent put fresh life into Argentine rails on the assumption that when the trade agreement is settled, Argentina will lose no time in ratifying the railway agreement. This has drawn more attention to the fact that Argentine rails are still at substantial discounts to their "pay-out" levels. The 4 per cent. debentures of leading companies were 93, or still seven points below pay-out levels. Central Argentine 6 per cent. preference stock moved up sharply to 34½. Brazilian rails have been firmer, with a good deal of speculative activity in Leopoldina on talk of eventual take-over possibilities. The ordinary stock was 14¼, the preference 39, and 4 per cent. debentures 64, while Leopoldina Terminal debentures were marked up to 52. San Paulo strengthened to 154½. United of Havana 1906 debentures were 15½, and Antofagasta preference improved to 59xd.

There was better demand for iron and steel shares on yield considerations. Shares of locomotive building and engineering companies were more active, with Beyer Peacock around 26s. and the 5½ per cent. preference changing hands up to 26s. 1½d.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffic for week: Total this year	Traffic for week: Inc. or dec. compared with 1945/46	No. of Week	Aggregate traffics to date: Totals 1947/8	Aggregate traffics to date: Totals 1946/7	Aggregate traffics to date: Increase or decrease	Shares or Stock.	Prices: Highest 1947	Prices: Lowest 1947	Prices: Jan. 20 1948
				£	£		£	£	£				
South & Central America	Antofagasta	834	11.1.48	52,770	+ 13,650	2	93,300	70,290	+ 23,010	Ord. Stk.	17	9½	11
	Arg. N.E.	753	10.1.48	ps.361,200	+ ps 38,300	28	ps.9,562,800	ps.8,825,400	+ ps.737,400	,,	21	10	11
	Bolivar	174	Dec., 1947	898,426	— $2,866	52	$1,260,009	$1,303,976	— $43,967	6 p.c. Deb.	25	16½	27½
	Brazil	—	—	—	—	—	—	—	—	Bonds	44½	26	45½
	B.A. Pacific	2,771	10.1.48	ps.3,050,000	+ ps1,050,000	28	ps.72,091,000	ps.62,156,000	+ ps.9,935,000	Ord. Stk.	11¼	6	11
	B.A.G.S.	5,080	10.1.48	ps.4,352,000	+ ps.408,000	28	ps.98,073,000	ps.94,490,000	+ ps.3,583,000	Ord. Stk.	19	12	18
	B.A. Western	1,924	10.1.48	ps.1,550,000	+ ps.188,000	28	ps.39,803,000	ps.34,883,000	+ ps 4,920,000	,,	28½	14¼	22½
	Cent. Argentine	3,700	10.1.48	ps.3,598,400	+ ps.332,200	28	ps.94,313,271	ps.88,417,957	+ ps.5,895,314	,,	21	9	19
	Do.	—	—	—	—	—	—	—	—	Dfd.	21	5	13½
	Cent. Uruguay	970	10.1.48	28,637	— 2,979	28	908,095	1,019,047	— 110,952	Ord. Stk.	30½	9½	23
	Costa Rica	262	Nov., 1947	34,296	+ 13766	22	162,347	132,743	+ 29,604	Stk.	13	8½	8
	Dorada	70	Oct., 1947	26,800	— 3,300	44	300,900	309,975	— 9,075	1 Mt. Deb.	108	100½	106½
	Entre Rios	808	10.1.48	ps.448,300	+ ps.14,400	28	ps.12,414,000	11,967,800	+ ps.446,100	Ord. Stk.	11	6½	11
	G.W. of Brazil	1,030	10.1.48	41,400	+ 600	2	56,200	ps.59,400	— 3,200	Ord. Stk.	102/6	19/–	3½
	Inter. Ctl. Amer.	794	Nov., 1947	$1,050,472	+ $217,110	48	$11,953,437	$9,543,915	+ $2,409,522	—	—	—	—
	La Guaira	22½	Dec., 1947	$89,178	— $17,932	52	$1,254,425	$1,393,471	— $139,046	5 p.c. Deb.	88½	65	84½
	Leopoldina	1,918	10.1.48	60,195	— 1,683	2	81,541	89,415	— 7,874	Ord. Stk.	22½	3½	14½
	Mexican	483	31.5.47	ps.1,464,000	+ ps 459,100	22	ps.7,706,200	ps.13,441,600	+ ps.5,220,000	Ord. Stk.	8	¾	1
	Midland Uruguay	319	Nov., 1947	16,340	+ 164	22	85,275	96,760	— 11,485	—	—	—	—
	Nitrate	382	15.1.48	13,686	+ 5,915	2	13,686	7,771	+ 5,915	Ord. Sh.	86/3	62/6	67/6
	N.W. of Uruguay	113	Nov., 1947	5,425	+ 57	22	25,863	28,279	— 2,416	—	—	—	—
	Paraguay Cent.	274	9.1.48	₲69,956	+ ₲6,290	28	₲1,717,751	₲1,765,512	— ₲47,761	Pr.Li.Stk.	60½	44½	52½
	Peru Corp.	1,059	Dec., 1947	184,411	+ 37,258	26	1,026,119	920,202	+ 105,917	Pref.	13	7	8½
	Salvador	100	31.10.47	c80,600	+ c7,600	17	c315,600	c322,000	— c6,400	—	—	—	—
	San Paulo	153¼	—	—	—	—	—	—	—	Ord. Stk.	189½	129½	155½
	Taltal	156	Dec., 1947	8,390	+ 4,710	26	40,740	29,410	+ 11,330	Ord. Sh.	24/–	17/–	18/9
	United of Havana	1,301	11.1.48	50,058	+ 2,376	28	1,631,935	1,376,430	+ 255,505	Ord. Stk.	4½	1½	1½
	Uruguay Northern	73	Nov., 1947	889	— 557	22	5,406	6,706	— 1,300	—	—	—	—
Canada	Canadian National	23,535	Nov., 1947	9,373,250	+ 91,250	48	99,924,750	91,193,750	+ 8,731,000	—	—	—	—
	Canadian Pacific	17,037	Nov., 1947	6,808,750	+ 242,750	48	72,495,250	66,887,000	+ 5,608,250	Ord. Stk.	18⅜	16	18½
Various	Barsi Light†	202	Nov.,1947	31,402	+ 8,700	35	205,350	184,770	+ 20,580	Ord. Stk.	114½	100½	103½
	Beira	204	Oct., 1947	116,016	+ 21,525	4	116,016	90,491	+ 21,525	—	—	—	—
	Egyptian Delta	607	30.11.47	15,840	— 8,474	39	380,158	443,463	— 63,305	Prf. Sh.	6¼	6	6
	Manila	—	—	—	—	—	—	—	—	B. Deb.	83½	69	82½
	Mid. of W. Australia	277	Oct., 1947	19,914	— 920	17	78,882	69,457	+ 9,425	Inc. Deb.	75	65	74½
	Nigeria	1,900	Nov. 1947	506,530	+ 44,927	35	2,930,730	3,076,711	— 145,981	—	—	—	—
	Rhodesia	2,445	Sept., 1947	643,980	+ 102,833	52	6,787,603	6,174,664	+ 612,939	—	—	—	—
	South African	13,323	27.12.47	1,160,569	+ 127,250	39	48,959,678	44,633,894	+ 4,325,784	—	—	—	—
	Victoria	4,774	Aug., 1947	1,177,321	— 11,568	9	—	—	—	—	—	—	—

† Receipts are calculated @ 1s. 6d. to the rupee